RCRA FACILITY ASSESSMENT REPORT
FOR
DICO OIL CORPORATION

EPA ID NO. CAD980737076

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SUBMITTED TO:
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EXECUTIVE SUMMARY

The first step in the Resource Conservation and Recovery Act (RCRA) corrective action process is the RCRA Facility Assessment (RFA). The RFA is conducted by the State of California Environmental Protection Agency, Department of Toxic Substances Control (Department). This RFA was completed in accordance with EPA's RCRA Facility Assessment Guidance (EPA/503-86-053). The RFA was conducted to assess if there has been releases or potential for releases of hazardous waste or hazardous constituents solid waste management units (SWMUs). The main components of a RFA are the identifying and gathering of information on releases or potential releases at the facility; evaluating SWMUs for releases to all media (soil, groundwater, surface water, air and subsurface gas); and making determinations regarding releases of concern and the need for further action and interim measures at the facility.

A RFA has been conducted for Dico Oil Corporation, EPA ID No. CAD980737076. The Department has determined the SWMUs which may require corrective action. A total of nineteen SWMUs (19) were identified.

The media for potential human and environmental receptor exposure to hazardous wastes for the SWMUs identified are primarily groundwater and soil. The Dico Oil facility is located in an area in which groundwater from the underlying aquifer is one mile from a production well east of the site which is owned by the City of Long Beach. The site groundwater flow direction in the vicinity of the site is roughly estimated to also be in an east or northeast direction. The well produces water from depths of approximately 300 to 900 feet. Although, groundwater beneath the Dico facility is estimated to be present at depths below 150 to 200 feet, local perched ground water could be present at much shallower depths, particularly after the heavier than normal rainfall.

No documentation of contamination of drinking water aquifers was available for this report. A number of SWMUs appear to have a potential to contribute to groundwater contamination. These are primarily the SWMUs in the process area which include Storage/Process Tanks T1-T4, TA5 and TB (SWMU Nos. 1-6), the Piping System (SWMU No. 14), the Trench in the Process area (SWMU No. 10), the unpaved portion of the Drum Storage are (SWMU No. 15) and the Sump in the Loading/Unloading area (SWMU No. 19). Other SWMUs have a potential to contribute to groundwater contamination, perhaps to a lesser extent. These are the Berm of Contaminated Soil which surrounds the facility (SWMU No. 11), Tank Pit Areas No. 1 & 2 (SWMU No. 9 & 10 respectively) and the Truck Loading/Unloading area (SWMU No. 12).

The potential for air emissions from the facility exist via two pathways: (1) volatilization of organics from the waste oils and wastewater process and storage tanks which vent to the atmosphere and (2) release to air of contaminated surface soil particulate via wind. There is no documentation from prior investigations of air emissions that has been compiled for the facility.

Several SWMUs have documented evidence of releases or have a potential for release to soil that could be significant as observed during the VSI and previous inspections. The most significant of these include the process area SWMUs listed above, the two tanks which have leaked Tanks TA5 and T4 (SWMU Nos. 4 & 5), the trench in the process area (SWMU No. 10) and the Piping System (SWMU No. 14). The facility has no secondary containment capable of containing any spills or leaks from the tanks. All tanks have not assessed by a qualified certified engineer to ensure that they are not leaking or fit for continued use. The Berm which surrounds the facility contains contaminated soil.

Potential release to surface water exists from the facility SWMUs. The closest sensitive area would be the Los Angeles River which

lies approximately 1.8 miles to the west of the site. However, any spillage from the site could be carried to local storm drains and subsequently to the local surface water bodies. Likewise, storm run-off from the site could easily be carried to those bodies of water.

The site is located on the flank of Signal Hill, and lies outside of the 500 year flood plain and does not appear to be threatened by inundation.

RECOMMENDATIONS

It is recommended that a RCRA Facility Investigation (RFI) be required to assess the nature and extent of the soil contamination. The RFI should also include in the Scope of Work a detailed discussion of: site history, topography and surface drainage, soil vapor assessment, soil matrix sampling and a ground water investigation. Soil contamination verified either through documentation or interviews, visual observation, sampling, or a combination included the following areas: (SWMU Nos. 1-6, 8, 9, 10, 11, 17 and 18). All SWMUs should be investigated to confirm this assumption.

Given the age of the site (the site has been exposed to over 40 years of oil management activity and has had a history of spills), the poor condition of the storage tanks, soil contamination previously identified, visual evidence of contamination from recent sampling visit and concerns regarding seismic safety (possible catastrophic failure of tanks, the site may pose a significant threat to groundwater. However, there is currently insufficient data available to fully evaluate conditions at the site and the extent of contamination resulting from Dico's activities which may further threaten groundwater.

It is also recommended that sources of air emissions be evaluated

in order to design any appropriate mitigation measures that may be needed.

Finally, it is recommended that Dico test their tanks for structural integrity because some tanks were noted during the VSI to be out-of-service, dented and because the age of most of the equipment on site is over 40 years old. It is also recommended that Dico install secondary containment for all hazardous waste tanks.

A list of SWMUs ranked with the level of concern is provided following this discussion.

1.0 INTRODUCTION

This Draft RCRA Facility Assessment (RFA) Report for the Dico Oil Corporation facility located in Signal Hill, California (EPA ID No. CAD980737076) was prepared by California Environmental Protection Agency Department of Toxic Substances Control (the Department). This RFA has been completed in accordance with EPA's RCRA Facility Assessment (RFA) Guidance (EPA/530-86-053).

1.1 Purpose and Scope of the RCRA Facility Assessment (RFA) Program

The 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA provide the authority to the U.S. Environmental Protection Agency (EPA) to require comprehensive corrective action on all solid waste management units (SWMUs) and other areas of concern (AOCs) at the hazardous waste management facilities where release(s) of hazardous constituents has occurred. The Department has been authorized by the United States Environmental Protection Agency (USEPA) to administer the State hazardous waste program in lieu of the Federal hazardous waste program pursuant to Section 3006 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6926. This includes facilities under interim status facilities applying for Part B permits, and undergoing closure. The intent of this authority is to address previously unregulated constituents released to air, surface water, groundwater and soil, and the generation of subsurface gases.

A major activity of the EPA's corrective action program consists of a RFA. According to USEPA's Guidance Document, the purpose of conducting a RFA are the following:

1. To identify and gather information on releases at RCRA-regulated facilities.

2. To evaluate solid waste management units (SWMUs) and other Areas of Concern (AOCs) for release to all media and regulated units for releases other than to groundwater. Solid waste management units (SWMUs) are defined as any discernible waste management unit at a RCRA facility from which wastes or constituents might migrate, irrespective of whether the unit was intended for the management of solid waste and/or hazardous waste. SWMUs include those units defined as "regulated units" under RCRA, as well as other units which USEPA has generally exempted from standards applicable to hazardous waste management units, such as recycling units and wastewater treatment units, and areas contaminated by "routine, systematic, and deliberate discharges" from process areas. For the purpose of this assessment, areas of concern (AOCs) are defined as 1) hazardous material product storage units or areas; 2) one-time hazardous material product spill events; and 3) hazardous material units or areas where waste management may have occurred and where potential for release may have existed, but where insufficient evidence was found during the PR file review to verify the existence of a definable SWMU. Every effort was made to relate spills (AOCs) back to a corresponding SWMU.

3. To make preliminary determinations regarding releases of concern and the need for further actions and interim measures at the facility.

4. To screen from further investigation those SWMUs which do not pose a threat to human health and/or the environment.

The three basic steps of an RFA are (1) a preliminary review (PR) of existing files and other generally available or requested information, (2) a visual site inspection (VSI) to confirm and/or obtain additional information of past or present releases, and (3) when warranted, a sampling visit to fill data gaps by obtaining field and analytical data. The information gained during these steps is combined into a comprehensive RFA report which ultimately addresses the need for further investigation of the site or, where warranted, corrective measures to remediate the potential for releases (or further releases) of hazardous waste from a facility.

1.2 Report Contents

This RFA report provides a comprehensive summary of the information obtained from a detailed file review and evaluation of the history, processes and waste management practices employed at Dico Oil Corporation. Sources of information include files from CAL-EPA the Department of Toxic Substances Control Region 4, the owner/operator of the facility Richard Cowan, personal interviews with these parties as well as information that was compiled for the facility through the request of other regulatory agencies that are involved such as the Regional Water Quality Control Board (RWQCB), City of Signal Hill, Planning Department, County Sanitation Department, and the onsite inspection conducted at the Dico Oil facility on March 30, 1994.

This report consists of several sections. Section 2 will provide a description of the site location, operations and processes, and waste generation. Section 3 describes the regulatory history of the facility and discussion of the mitigation activities, if any (i.e., previous and current investigations of facility contamination). Section 4 describes an overview of the environmental setting of the facility. Section 5 describes the facility's waste management practices. Section 6 describes the potential SWMUs identified during the course of this preliminary assessment. Section 7 to be prepared following the VSI, will discuss potential or documented contamination migration pathways and potential or documented human and environmental receptors. A list of references used to prepare this RFA is provided in Section 8. Figures can be found in Appendix A and Tables can be found in Appendix B.

2.0 FACILITY DESCRIPTION

The Dico Oil Corporation facility (hereinafter referred to as Dico) consists of one building, six processing tanks and two water storage tanks. The street address of the facility is:

Dico Oil Corporation
1845 E. Willow
Signal Hill, California 90806

Dico Oil Corporation is a California Corporation which is wholly owned by Richard Cowan. The plant was operated by TCL Corporation between 1952 through 1958. Western Oil Reduction Company operated on the site between 1958 through 1960. Aerial Maps for the Signal Hill area dated 1949 indicated that this area was mainly composed of "grasshoppers" (oil extraction rigs) and some tanks with little or no commercial development in the area where the facility is now located. An aerial photo maps dated 1964 and 1969 indicated that some commercial and business development was in the area of the site. The site was still mainly surrounded by "grasshoppers" which were still large in number. The facility was identified on the map and verification of three additional tanks could be seen on the site. It was noted that none of the businesses in the surrounding area had pavement or secondary containment. Maps dated 1972 and 1981 identified more commercial and residential buildings surrounding the facility.

The land owner from 1960 until her demise was Bianca Denhe and John Hockenbr. Mr. Cowan has been employed at the facility since 1960. Mr. Cowan assumed personal ownership of the property as the result of a bequest established when Ms. Denny died. On February 9, 1994 a document citing that the apparent owner, filed a petition for bankruptcy which is the current status of the facility at the present time.

The facility is surrounded by a 6-foot cyclone fence with two entry/exit gates. One entry/exit to the facility from E. Willow Street and an entry/exit that is located at the end of the facility which provides routes to a vacant lot owned by Barto Oil which Mr. Cowan has permission to use. The entrance gate is locked during off hours. The surrounding area includes both commercial and residential buildings. The main street which borders the site are 27th Street to the north, Willow Street to the south, Rose Street to the west, and Cherry Ave. to the east. The site is physically bordered by Barto Oil formerly Texaco to the west which operates an oil extraction farm. The eastern portion of the site is bordered by residential homes which is located approximately fifteen feet from the facility. The southern portion of the site is bordered by a vacant lot which is used a traffic route and exits on to 28th street and owned by Barto Oil formerly Texaco. The site is bordered to the north by a strip mall which houses offices and small businesses.

2.1 Facility Operations

Dico has operated as a used oil storage and recycling facility since 1960. The actual facility operation comprises an enclosed area of approximately 18,000 square feet. Presently, three persons work at the facility: Mr. Cowan, who is chief operating officer and owner, Jay Cutbirth employed to handle hazardous waste oil and Danette Cowan who handles office duties.

The facility recycles used oil and other petroleum-based oils with some recycling of crude oil. The waste streams that are accepted at Dico Oil are: crude oils, residual cracked fuel oils, diesel fuels, jet fuel type, kerosene and stoddard solvents and used oil. The facility does not accept materials containing chlorinated solvents, chemical degreasers or chemical solvents and halogenated oils. The facility is not authorized to recycle any waste oil with a flash point below 100°F. The facility is not authorized to accept any

RCRA or EPA-listed hazardous, acutely hazardous, or restricted waste. The facility proposes to accept RCRA wastes as part of its Part B application. Mr. Cowan stated that they use to recycle crude oil about fifteen years ago but now the volume is quite small.

Before accepting a shipment of oil, Dico collects a sample from the load and runs a series of test on the sample and depending on the results derived from the test Dico accepts or refuses the load. The laboratory analysis that is done on incoming loads of waste oil are: Chlordetect for halogens, gravity, BS & W, temperature and flash point.

Upon acceptance at the facility of a load of used oil, tanker trucks offload into one of the six tanks. Waste is off loaded from the truck unloading area (SWMU No. 12) via a piping system which transfers the used oil into whichever tank is available.

Treatment is conducted in tanks using gravity separation. Emulsifying agents are also added to the treatment process to break down the oil mixtures that don't readily separate. Dico blends oils with varying amounts of water and sediment levels to create a marketable fuel. With the exception of the the emulsifying agents nothing is added to or removed from the oil it is simply blended together in the tanks.

The analysis that is being done for the out-going loads of recycled oil are performed by a certified laboratory to determine if oil meets the recycled oil standards. The "recycled oil" is then sold through brokers, to the bunker oil market as ship fuel. Dico purchases and resells between 2-3 million gallon of oil per annum. Mr. Cowan stated that the facility generates on-site about one 55-gallon drum of waste per month.

The facility maintains six operational aboveground storage/process tanks involved in processing and/or storage of petroleum

derivatives. (SWMU Nos. 1,2,3,4,5 and 6). The tanks vary in intended purpose, capacities and stored materials. The tanks are steel riveted, the roof of the tanks are slightly cone shaped in order for the rain to run off the tops. The roofs are vented to the atmosphere through a square portal which is shaped in order that the rain cannot drain into the tank. There is a slight clearance between the roof and the tank. The tanks appear to have been constructed approximately in the 1940s. The exact date is unknown but will be verified during the VSI. There are two aboveground water storage tanks located at the facility for emergency operations. The maximum storage capacity of the facility is 142,380 gallons.

3.0 REGULATORY HISTORY

3.1 Permit Status

Dico Oil submitted a Part A application to the Department of Toxics Substances Control (DTSC), formerly the Department of Health Services (DHS), on April 17, 1986. The facility was issued an Interim Status Document (ISD) on March 29, 1989. The ISD authorized the facility to receive, store, treat or recycle: used oil as defined in section 25250.1(a) of the Health and Safety Code; waste oil or slop oil; diesel and jet fuels. Treatment other than heat enhanced gravity separation is prohibited. No specific amount of oil was documented which could be treated or stored at the site. Prior to issuance of the Interim Status Document, Dico Oil operated as an unpermitted facility. An application for a Hazardous Waste Facility Permit (Part B permit application) was submitted to the Department in 1992 there is no documentation in the files acknowledging receipt of the Part B.

In May 1985 Dico submitted an application to the California Regional Water Quality Board (CRWQCB) for waste water discharge permit. The CRQCB rescinds the permit in July 1993 because the facility no longer engaged in waste water discharge. The CRWQCB requested in February 1986 that the facility submit a site assessment plan, due to a prior investigation which found petroleum contamination in the soil.

The Department is currently reviewing the Part B application and has requested on 4/29/94 that the facility submit a revised plan. Information in many parts of the plan were completely missing or inadequate. The following is a brief chronology of Dico permitting history and major deficiencies in the current Part B Application submitted to the Department:

Background

Permitting History

8-24-84 U.S.EPA sent a letter to DICO advising the facility that the agency had approved the recision of its status as a transporter as the facility had requested. U.S.EPA advised DICO of its status as a RCRA exempt oil recycler.

5-13-85 DICO submitted an application to the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) formally Department of Health Services (DHS) for an Interim Status Document (ISD) to receive, store, treat or recycle used oil.

5-13-85 DICO submitted an application to the California Regional Water Quality Board for a Waste discharge Permit.

4-17-86 Dico Oil submitted a Part A application to the Department of Toxics Substances Control (DTSC), formerly the Department of Health Services.

4-6-89 The DHS issued an Interim Status Document to DICO. This TSD allows DICO to recycle oil under the condition that the facility would meet financial responsibility requirements within sixty (60) days. The ISD became effective on 3-29-89.

7-30-93 The California Regional Water Quality Control Board rescinds the waste discharge permit because the facility no longer engages in waste discharge to the city sewage system.

4-29-94 DTSC issued an initial completeness review letter to DICO for their Permit Application (Part B). The letter requested DICO to revised and resubmit their Part B due to inadequate information. Only three sections were submitted (Closure Plan, Contingency Plan and Waste Analysis Plan) to DTSC.

3.2 Surveillance and Enforcement

The Surveillance and Enforcement Branch of DTSC has conducted several inspections since May 1985. During the period from September 29, 1987 to September of 1993, numerous violations were found during these inspections. The following is a brief chronology of Dico's Compliance history:

Background

5-20-85 DHS conducted an inspection at DICO and observed record violations, including: no written inspection records; no written inspection schedule; no waste analysis plan; no contingency plan; no personal training records; no closure plan; and failure to comply with the financial responsibility requirements.

6-6-85 DHS conducted an inspection of DICO and observed the following violations: incomplete operating records; no written inspection schedule; no annual report; failure to comply with the financial responsibility requirements; no closure plan; no personnel training records; inadequate contingency plan; inadequate waste analysis plan; and no records of waste analysis.

2-4-86 The City of Signal Hill notified the DHS that DICO appeared to be operating its facility without secondary containment. The City of Signal Hill requested the DHS to investigate and supply the city with a report.

2-9-86 An inspector from the California Regional Water Quality Control Board (CRWQCB) investigated DICO and found possible petroleum contamination in the soil. A letter was sent to DICO requesting a site assessment plan.

1-2-87 DICO responded to the CRWQCB by submitting a site assessment plan. DICO also reported that one tank on the facility had been removed.

9-29-87 DHS conducted an inspection in response to a complaint alleging that DICO was accepting non-RCRA waste without a permit. Samples were obtained from the facility and analyzed at Southern California Laboratory (SCL) and found waste oil to be hazardous. The following violations were found: no financial assurance, no waste analysis plan, no security, no warning signs posted, no inspection records, no personnel training records, no communication/alarm system, no emergency arrangements with local authorities, inadequate contingency plan, incomplete operating records, no annual report, no written closure plan, no written closure cost estimate, and containers with hazardous waste were uncovered and unlabeled.

10-19-87 DICO submitted to the DHS a letter responding to the inspection on 9-29-87. DICO contended

that the documents alleged to be missing during the inspection had been submitted to the DHS in 1986 and described other actions taken by the facility to come into compliance with the regulations. DICO requested that the DHS offer suggestions for compliance rather than an ROV.

10-20-87 The DHS issued ROV citing 22 violations against DICO as a result of the 9-29-87 inspection.

11-23-87 DICO made efforts to comply with the ROV issued on 10-20-87 by submitting to the DHS copies of the personnel training plan, waste analysis plan and closure plan.

6-10-88 The Financial Responsibility Unit of the DHS evaluated DICO's financial assurance and liability documents and determined that DICO failed to demonstrate the financial responsibility required to manage hazardous waste.

6-20-89 The Financial Responsibility Unit (FRU) sent a warning letter to DICO stating that they had not complied with conditions described in their ISD: the sixty (60) day deadline (expired on 5-29-89) with no compliance achieved by the facility on that date. FRU gave the facility an extension of 10 days to submit the required financial responsibility documents or risk the revocation of the ISD.

9-13-89 FRU again reviewed DICO's financial records and observed that DICO was still not in

compliance with financial assurance and liability requirements.

10-26-89 DICO was inspected by DHS and seven potential & violations were observed which included: no written 11-26-89 closure cost estimate, no copy of closure plan for inspection, no copy of Biennial Report, no contingency plan including evacuation routes, failure to place hazardous waste in containers with labels and falsely certifying "recycled oil" which did not meet standards.

11-9-89 The DHS issued an ROV against DICO based on the violations observed during 10-26-89 & 11-26-89.

1-16-90 The financial Responsibility Unit issued a Statement of Facts on DICO describing its financial compliance history for closure and liability coverage. According to the Statement of Facts, DICO was clearly out of compliance with financial responsibility requirements as of 1-5-90 and had not shown good faith efforts to comply. The Statement recommended the assessment of penalties of $27,500 for the violations.

2-6-90 The DHS issued a Corrective Action Order (CAO) against DICO for the following violations: soil contaminated with excessive levels of polychlorinated biphenyl (PCB's) being disposed of at the west side of the driveway on-site and also being added to the berm surrounding the tank area on-site; false certification of recycled oil contaminated

with lead; failure to use a certified laboratory to perform analysis of recycled oil; failure to possess adequate financial assurance for closure; failure to provide adequate financial coverage for sudden accidental occurrences; failure to prepare and submit a copy of the biennial report to the DHS by March 1 1986 and 1988; failure to properly label 14 containers of waste oil drippings; failure to furnish or to make available for inspection its closure plan; and failure to amend contingency plan when the emergency coordinator employee left the DICO facility.

4-1-91 A stipulation and Order was issued by the DHS to DICO based on the February 6, 1990 CAO. DICO was directed to pay $1,041.67 per month for two years, for a total penalty of $25,000.

5-7-91 Representatives of DHS met with Richard Cowan facility owner/operator. Mr. Cowan stated that he would be unable to implement the approved workplan for characterization of the vertical and horizontal extent of the PCB contamination in the soil until

1-15-92. Mr. Cowan was directed to cover the areas of contamination by 5-24-91 with visquene, a heavy polyethylene liner, and to inspect weekly. By 11-7-91, he was to have removed all of the contaminated soil. By 1-15-92, he was to have initiated core drilling for subsurface samples.

5-9-91	Inspectors from DHS visited the facility to check for compliance with the 4-1-91 settlement agreement. All violations had been corrected, except for the pending removal of the contaminated soil.
12-16-91 & 1-7-92	DTSC conducted an inspection of DICO and observed 3 potential violations: failure to maintain facility so as to minimize the possibility of an accident or sudden unplanned release of hazardous waste; failure to sign and date manifest; and failure to properly secure a container holding hazardous waste.
2-18-92	The DTSC issued a Field Order against DICO based on the above mentioned inspection and assessed the facility a penalty of $500.00.
9-30-93	An inspection was conducted by DTSC on 8-16 & 17/93. A Report of Violation was issued with the following violations: storage of 55-gallon drums of hazardous oil and sand waste for more than ninety (90) days and failure to obtain a hazardous waste storage facility permit or other grant of authorization from the Department; failure to provide secondary containment for tanks system; failure to submit to the DTSC a proposed alternative financial mechanism for closure costs together with a letter of proposed mechanism to be considered acceptable for meeting requirements of Title 22; failure to adjust closure cost estimate for inflation within 60 days prior to

the August 2 anniversary date of established closure cost fund; failure to keep containers of hazardous waste closed except when adding or removing hazardous waste; failure to maintain and operate facility in a manner to minimize releases of hazardous waste and minimize possibility of fire or explosion; cited for various oil leaks throughout the facility; failure to provide the Department with Tank Integrity Assessments certified by a registered professional engineer; failure to submit an annual report of total volume of used oil possessed at the beginning and end of the preceding calendar year; failure to provide proper decontamination equipment and spill control; failure to follow a waste analysis plan; failure to keep a copy of the inspection schedule at the facility; and failure to update its contingency plan.

12-28-93 DTSC issued an Enforcement Order to DICO oil for violations identified in the 9/30/93 (other inspections) inspections.

5-13-94 DTSC issued an ROV as a result of an inspection conducted on April 7, 1994. The violations that were cited were: failure to document inspection logs for presence of leaks in Tank 4; failure to notify all facility personnel about leaks or releases resulting from Tank 4; failure to immediately remove tank 4 from service when releases were discovered; failure to notify DTSC within 24 hours from release; negligently caused disposal of hazardous waste at an unauthorized

point on its facility; and failure to perform routine inspection of tanks from March 31, 1994 to April 7, 1994.

4.0 WASTE MANAGEMENT PRACTICES

Currently, the Dico Oil Corporation facility operations involve the recycling of used or waste oil and small amounts of water. The present maximum storage capacity at the facility is 91,519 gallons.

Used oil is collected and brought to the facility from Dico Oil's customers via tanker trucks. Upon arrival at the facility of waste shipments to Dico, a sample from the load and a series of test is run on the sample. Depending on the results derived from the test, Dico accepts or refuses the load.

The laboratory analysis that is done on incoming loads of waste oil are: Chlordetect for halogens, gravity, BS & W, temperature and flash point. Oil recovered from the processing/storage tanks is discharged directly into tanks or trucks. After the blending process, a sample is then collected and tested by a California state-certified laboratory to determine if oil meets the specifications of recycled oil as required in the Health and Safety Code (H&SC). The material is then pumped into waiting tanker trucks to be delivered as a fuel product, if the material meets the recycled oil standards.

According to Mr. Richard Cowan, the owner/operator, the wastes received at the facility must by pre-qualified (profiled) prior to being accepted for processing. The pre-qualification process may include analytical tests that indicate whether material is compatible with the waste streams currently received by the facility.

The generator or the hauler will be contacted as soon as possible to resolve any discrepancies. If a significant discrepancy cannot be resolved within 15 days of receipt of the waste shipment , a letter describing the discrepancy, attempts made to resolve the problem, and a copy of the manifest will be immediately sent to CAL-EPA.

Material of questionable origin or type shall include a certified laboratory analysis, provided by the generator, which proves that the waste in question contains no hazardous material other than those allowed by Dico Oil's Interim Status Document. If laboratory analysis indicates that Dico Oil cannot accept the waste material and the material is rejected, the generator will be notified of the rejection and the truck will be turned away. CAL-EPA will be sent a letter and copy of the manifest by the 15th of the following month.

The waste material received is transferred from trucks via a closed system of hoses, pipes, and pumps into the storage tanks.

Dico Oil operates a drum storage container area (SWMU No. 15) located on the north-west portion of the site, adjacent to an area which contains waste water tanks for the facility. The area which has a partial concrete pad was constructed for storage of containers (e.g. drums and bulk storage containers).

The majority of the tanks at the facility process and store used oil, oily water or oil with small amount of water. Tanks TA5 and T4 have been leaking and are not currently operating.

Other wastes managed at the facility include the following:

* Tank bottom solids and sludge are generated from the treatment process. Adsorbents are added to absorb free liquid and then stored in containers in the drum storage area until disposal offsite.

* Laboratory waste are accumulated in drums at the point of generation and then stored in the drum storage area until disposal offsite.

Containerized wastes stored in the drum storage area, are picked up on a regular basis and disposed of offsite.

Contaminated soil is a waste that historically has been managed as a hazardous waste. In some cases, waste piles of excavated soil may have been used on site for purposes of constructing a berm around the facility (SWMU No. 11). Contaminated soil excavated have also been containerized and temporarily stored in the drum storage area and disposed of offsite as hazardous waste.

According to a DTSC inspection report dated December 1993, soil samples were taken from the trench within the tank farm (SWMU No. 10) samples which revealed high concentrations of polychlorinated biphenyl (PCBs). Mr. Cowan stated that much of the contaminated soil has been excavated and placed in drums prior to storage and/or removal from the site. The drum storage area currently contains two 55-gallons of PCB contaminated soil.

5.0 ENVIRONMENTAL SETTING

5.1 PHYSIOGRAPHY

The Dico Facility is located in one of a number of northwest-southwest trending hills which have resulted from movement and uplift along the Newport-Inglewood Fault Zone (NIFZ). The NIFZ is the dividing line between the Central and West Coast groundwater basins within the Los Angeles Basin. Natural drainage is toward the north.

5.2 GEOLOGY AND HYDROLOGY

GEOLOGY

Site specific geology was determined from soil borings drilled during a remedial investigation done by Jack Bryant & Associates, Inc. The investigation was also designed for soil excavation and to assess the potential impact to soil and groundwater from removal of two underground storage tanks. The stratum, from the surface to a variable depth of approximately nine feet below ground (bg), consist of slightly silty sand. The excavation exposed Pleistocene marine deposits composed of loose to poorly cemented sands. Sands were reddish brown and greenish gray in color. Poorly cemented sand containing marine deposits was encountered at a depth of nine to eleven feet below ground surface (bg). The sand was greenish gray in color. Loose sand with marine deposits was encountered at eleven to thirteen feet bg. This sand was reddish brown in color. Poorly indurated sand was encountered from thirteen to sixteen feet bg (the terminal depth for the deepest boring drilled). The sand was tan to gray in color. No groundwater was encountered from the soil borings drilled.

GROUND WATER

The Dico facility is located in the southern part of the groundwater basin known as the Central Basin. The southern boundary of the Central Basin is delineated by the Newport-Inglewood belt of hills, part of which includes the Signal Hill area. Within the Central Basin groundwater can be found in several different aquifers within three different formations. Groundwater production in the area is primarily from the Gage, Hollydale, Lynwood, Jefferson, Silverado and Sunnyside aquifers which all lie within the San Pedro Formation and the Gage aquifer within the Lakewood Formation. In this portion of the basin, it appears that all of these aquifers are within two miles of the Dico Facility and all are in hydraulic communication.

Bellflower aquitard appears to be continuous beneath the site and would slow the vertical migration of contaminants into the lower aquifer units, although this zone of lower permeability would not preclude the migration of contaminants particularly if solvents are present. This aquitard consist of clay, silt and sandy silt, directly underlies the site and extends 105 feet down to the Gage aquifer. The Gage aquifer extends 105 feet beneath ground surface (bgs) to a depth of 175 feet. The Gage aquifer is interconnected with the Jefferson, Lynwood and Hollydale aquifers beneath the site. These aquifers extend from 175 feet bgs to a depth of about 300 feet bgs. The Silverado aquifer extends from 400 to 600 feet bgs. The Sunnyside aquifer extends from 650 to 950 feet bgs.

Groundwater flow direction in the vicinity of the site is roughly estimated to be to the east or northeast. The closest public production well for drinking water is named Citizen 7A well is located one (1) mile east of Dico facility. Citizen 7A well is owned by the City of Long Beach Water Department. According to the water well driller's report, the Citizen 7A well is perforated starting at 300 feet and extending to 898 feet. The Lynwood, Sunnyside and Silverado aquifers supply water to this well.

Groundwater beneath the Dico facility is estimated to be present only below depths of 150 to 200 feet

The Long Beach Water Department uses a blending process for its groundwater obtained from wells. Groundwater from its wells are blended with water obtained from the Metropolitan Water District's aqueduct system. The blended water mixture is 45% groundwater to 55% water from the Metropolitan Water District. Groundwater from the underlying aquifers is used for residential and industrial purposes. The net annual precipitation in the Signal Hill area is approximately fifteen inches.

Being located as it is on the flank of Signal Hill, the site lies outside of the 500 year floodplain and does not appear to be threatened by flooding.

SAMPLING ACTIVITY

There is no documented observed releases of contaminants to groundwater associated with the operations conducted at the Dico facility. Sampling results from samples collected beneath the area where the Underground Storage Tanks were located indicated that the soil was contaminated with hydrocarbons. The level of total petroleum hydrocarbon at 1 foot beneath the excavation was 945.3 mg/kg. The level of total petroleum hydrocarbons from a sample extracted from 6 feet beneath the excavation was 19.7 mg/kg. This sampling data indicates that a majority of the oil that leaked from the excavated Underground Storage Tanks had not migrated in the soil at a rapid rate.

5.3 SOIL AND GROUNDWATER INVESTIGATIONS

There has been no documented observed release of contaminants to groundwater associated with the Dico facility. There have been

several past sampling activities conducted by the DTSC as well as the facility.

Past Sampling Activities:

The following is a brief discussion of those past sampling activities between 1985 and 1992.

1. Sampling Activity Date: September 29, 1987

Jerry Earley from the DTSC conducted a sampling activity in which two liquid and one soil sample was collected. The laboratory in which the samples were analyzed was not noted in the report. The analysis on the samples were for Total Metals and PCBs. The results of the analysis for this particular sampling activity are summarized below:

SAMPLE IDENTIFICATION	PCBs (mg/Kg)	TOTAL METALS (mg/Kg)
Liquid Sample #1	non-detect	*BLR
Liquid Sample #2	non-detect	*BLR
Soil Sample	non-detect	*BLR

*BLR (Below Regulatory Limit)

2. Sampling Activity Date: October 14, 1987

Jerry Earley from the DTSC conducted a sampling in which three soil samples were collected. The samples were analyzed at Southern California Laboratory. The samples were analyzed for Total Metals. The following is a summary of the results:

SAMPLE IDENTIFICATION	TOTAL METALS (mg/Kg)
SAMPLE #1	14-Arsenic, 860-Lead 670-Barium
SAMPLE #2	35-Lead
SAMPLE #3	130-Lead

3. Sampling Activity Date: June 15, 1988

Personnel from Precision Tank Company collected four soil samples. The samples were analyzed by Global Geochemistry Corporation in Canoga Park, CA. The type of analysis that was performed on the samples were for Total Petroleum Hydrocarbon (TPH). The samples were extracted from an area where a half tank was removed. The samples were taken at depths of 10 feet, 12.5 feet, 14.5 feet and 15.5 feet which is the location of the tank bottom. The following is a summary of the results:

SAMPLE IDENTIFICATION	Total Petroleum Hydrocarbon (TPH) (ug/g dry soil)
Sample #1 (10 ft. depth)	22.5
Sample #2 (12.5 ft. depth)	27.1
Sample #3 (14.5 ft. depth)	945.3
Sample #4 (15.5 ft. depth)	19.7

MISSING Aug 89 data

4. Sampling Activity Date: December 12, 1989

Greg Holmes and Irene Munos from the DTSC conducted a sampling activity in which three soil samples were collected. The samples were analyzed by Southern California Laboratory. The samples were analyzed for total metals and PCBs. The samples were collected from an area where an underground hazardous

waste storage tank was removed. The results of the sampling is summarized in the following table:

SAMPLE IDENTIFICATION	PCBs (mg/Kg)	TOTAL METALS (mg/Kg)
Soil Sample #1	non-detect	*
Soil Sample #2	non-detect	*
Soil Sample #3	non-detect	*

* = Results not available for this Report.

5. Sampling Activity Date: January 7, 1992

Joseph Cully and Catherine Hanna from the DTSC conducted a sampling in which one soil sample was collected. The sample was collected from soils that was described in the report as a waste pile of dirt mixed with oil. The exact location of the waste pile is unknown but was within the boundaries of the facility. The sample was analyzed for PCBs and Total Metals. The analysis was done by Southern California Laboratory. The results of the analysis is summarized in the table below:

SAMPLE IDENTIFICATION	PCBs (mg/kg)	TOTAL METALS (mg/kg)
Soil Sample #1	non-detect	88-Ba, 68-Pb, 200-Zn

Ba = Barium Pb = Lead Zn = Zinc

This report does not contain a discussion on past ground-water sampling acitivity because there has been no ground water monitoring wells installed around the facility to investigate ground water contamination.

5.4 SURFACE HYDROLOGY

SURFACE WATER/FLOOD PLAIN

The closest surface water to the Dico facility is the Los Angeles River, which lies approximately 1.8 miles west of the site. The site does not appear to be a direct threat to local surface water bodies. However, any spillage at the site could be carried to the local storm drains and subsequently to the local surface water bodies. The site does not appear to be a direct discharge threat to local surface water bodies. The Dico facility is located on the flank of Signal Hill, the site lies outside of a 500-year floodplain and does not appear to be threatened by flooding.

5.5 CLIMATE/METEOROLOGY/AIR QUALITY

CLIMATE

The site is located in a semi-arid region of Southern California with an annual average of 15.4 inches of precipitation. The average temperature is 72 degrees F during summer, and 55 degrees F during the winter. Prevailing winds are from the west/northwest and the south. The limited amount of precipitation would tend to mitigate the possible vertical mitigation of those contaminants at the site whose mobility is controlled by the amount of which can act as a driving force. For other contaminants, such as chlorinated solvents, the limited rainfall would not significantly reduce the rate of vertical migration.

5.6 SEISMIC CONCERNS

SEISMIC

With its close proximity to the Newport-Inglewood Fault Zone (NIFZ), the site is susceptible to significant impact from earthquakes likely to occur along this structure. In the past 75 years along this fault there have been earthquakes in Inglewood (1921), Long Beach (1933), Dominguez (1941), and Newport Beach (1989). Recurrence intervals for significant (M6.0 to M7.0) events have been estimated based on slip rates at 2,000 to 3,000 years (Freeman et. al., Seismic Hazard Assessment Newport-Inglewood Fault Zone, 1992). However, the intervals between smaller events may not yield an accurate estimate of recurrence. It should also be noted that an earthquake (M6.9) which occurred in 1812 has been attributed to movement along the NIFZ which would call into question the estimated recurrence rates. Furthermore, Signal Hill is a complex fold containing blind thrusts which may be seismogenic, thus increasing the seismic threat even further.

5.7 FLORA/FAUNA

The local flora and fauna that would be considered a sensitive environment in reference to the site would be located at the closest surface water to the facility, which would be the Los Angeles River which is located approximately 1.8 miles to the west of the site.

During the warm, low-water months of the year, roughly from May through October, a variable algal growth occurs on the wet or submerged portions of the concrete channel lining. These algal mats are apparently quite attractive to a variety of invertebrates, as large numbers of shorebirds frequent this habitat. Downstream from Willow Street in Long Beach, a mixed cobble and earth channel

bottom has allowed the growth of some willows and seasonally abundant annual vegetation.

From July through October large numbers of southbound migrant shorebirds feed in this portion of the channel. The most abundant species is the western Sandpiper, Calidris mauri and some occurrence of the Brown Pelican. Maximum count for the most important species for the period of 1987 to 1992 according to surveys done by Brian Daniels a partial list is indicated below:

SPECIES	HIGH COUNT	DATE
Black-bellied Plover	130	8/19/89
Semipalmated Plover	200	8/22/92
Black-necked Stilt	750	8/3/92
Western Sandpiper	9000	8/22/92
Least Sandpiper	3900	9/7/92
Short-billed Dowitcher	400	9/7/90
Dunlin	13	10/21/91
Wilson Phalarope	40	8/7/87
Wilson Phalarope	40	8/12/87
Sanderling	50	8/23/87

Several shorebird species which are very uncommon transients in souther California have been recorded along the river bottom in Long Beach in fall; these include American Golden-Plover, Red Knot, Semipalmated Sandpiper, Stilt Sandpiper and Ruff. Counts in April 1990, and in April 1992 only 72 and 926 total shorebirds, respectively. Black-necked Stilts and American Avocets both nest in small number on sparsely vegetated islets just below Willow Street.

Compton Creek and Rio Hondo are two other tributaries which have communication with the Los Angeles River within the vicinity. The Los Angeles County Department of Parks and Recreation (1975) reports documents of occurrence of 108 birds species, 4400 ducks and 248 shorebirds of six species at the Rio Hondo. For the Compton Creek which is vegetated, and is a soft-bottomed channel observations of interest included four species os herons (Great

Egret, Snowy Egret, Green Heron and Black-crowned Night Heron) It is likely that some riparian species with relatively wide habitat tolerance breed along Compton Creek (e.g. Black Phoebe, Common Yellowthroat). No endangered species were discussed in the data compiled for this report.

6.0 SOLID WASTE MANAGEMENT UNITS AND RELEASE INFORMATION

Section 6.0 addresses potential solid waste management units (SWMUs) identified at Dico Oil Corporation site. These SWMUs were identified based on file reviews and regulatory agency and facility personnel interviews. For each potential SWMU that the documents reviewed discussed in some detail, information is provided on unit characteristics, wastes managed, release controls, history of releases and release potential. For those potential SWMUs that were identified but for which little or no information was available, only broad additional information needs were identified. Additional information needed to conduct an adequate assessment is also identified. Table 6-1 lists these SWMUs. Figure 1 shows the current location of many of these units.

TABLE 1
POTENTIAL SOLID WASTE MANAGEMENT UNITS
AT DICO OIL CORPORATION

Unit No.	NAME
1	PROCESS TANK T1
2	PROCESS TANK T2
3	PROCESS TANK T3
4	PROCESS TANK T4
5	PROCESS TANK TA5
6	PROCESS TANK TB
7	GUN BARREL TANK/STORAGE TANK
8	TANK PIT AREA #1 from (REMOVAL OF UGST)
9	TANK PIT AREA #2 from (REMOVAL OF UGST)
10	TRENCH WITHIN TANK FARM
11	BERM SURROUNDING TANK FARM (CONTAMINATED SOIL)
12	TRUCK LOADING/UNLOADING AREA
13	WASTE PILE OF SOIL
14	PIPING SYSTEM
15	HAZARDOUS WASTE DRUM STORAGE AREA
16	LABORATORY/SATELLITE ACCUMULATION AREA
17	PCB SOIL CONTAMINATION AREA near TANK T4
18	PCB and TPH SOIL CONTAMINATION AREA
19	SUMP IN LOADING/UNLOADING AREA

TABLE 2
TREATMENT AND STORAGE TANKS
AT DICO OIL CORPORATION

		TANK DIMENSIONS		
SWMU No.	TANK I.D.	CAPACITY (gallons)	DIAMETER (feet)	HEIGHT (feet)
1	T1	21,149	15	16
2	T2	21,149	15	16
3	T3	28,071	14.1	24
4	T4	42,198	17.3	24
5	TA5	8,663	9.6	16
6	TB	21,149	15	16
Total		142,380		

6.1 SWMU Nos. 1 - 6: Process Tanks T1 - T4, TA5, TB

Unit Description

The Part A document states that Dico Oil Corporation operates six aboveground tanks for treatment and/or storage of hazardous waste. The Part B that was submitted by Dico Oil Corporation contained incomplete information pertaining to the operations and processes ongoing at the facility. According to Richard Cowan, the owner/operator of the facility only five of the tanks are operating at the present time.

It was observed during the VSI the entire area where these tanks are located have no secondary containment. The tanks need to be tested for structural integrity due to the age and conditions of the tanks. Tank T1 (SWMU No. 1) has a capacity of 21,149 gallons. The tank is insulated but has not operated the heating system for over fifteen years. It is currently operating as a storage/process tank for used oil. The insulation which surrounds

the tank was in fair condition, there were no visible hole or cracks. The roof has port hole which vents to the atmosphere and is cone shaped for rain water run off.

Tanks T1 through T4, TA5 and TB are presented in the operation plan as processing and storage tanks. Table 2 presents a summary of hazardous waste treatment/storage tanks and their capacities. Upon acceptance at the facility of a load of waste oil, tanker trucks offload into one of the six tanks. Waste oil is off-loaded into whichever tank is available.

The tanks are steel riveted and the roof of the tanks are slightly cone shaped in order for the rain to run off the tops. The roofs are vented to the atmosphere through a square portal which is shaped in order that the rain cannot drain into the tank. There is a slight clearance between the roof and the tank. The tanks are believed to have been constructed approximately in the 1940s.

Treatment is conducted in tanks using gravity separation. Emulsifying agents are also added to the treatment process to break down the oil mixtures that don't readily separate. Dico blends oils with varying amounts of water and sediment levels to create a marketable fuel. With the exception of the the emulsifying agents nothing is added to or removed from the oil it is simply blended together in the tanks.

Wastes transferred between tanks and waste hauling vehicles through steel pipes and flexible hoses (see SWMU No. 14, Piping System). Transfers of wastes into tanks are accomplished with manually controlled pumps and equipment. Waste transfer operations are conducted under the supervision of facility personnel. The process tanks are not equipped with temperature or pressure controls. All tanks are operated at atmospheric conditions and have vents to the atmosphere. Waste feed cutoff are conducted manually for all tanks. Tank T1 is an insulated tank equipped with interior heating coils for heat treatment capabilities.

During the VSI, tanks T2, T3, T4, TA5 and TB were observed to have external deterioration due to corrosion, cracks, rust spots, blisters, buckles and leaking valves. Tank TA5 and T4 are not currently operating due to gross leakage.

Sampling results from the VSI revealed where several soil samples taken near or at the base of the storage/process tanks, indicated high levels of Total Petroleum Hydrocarbon (TPH) and PCBs. Results range from 4300 mg/kg of TPH and 360 mg/kg of PCBs near SWMU Nos. 2 & 3; 29,000 mg/kg of TPH; and 24 mg/kg of PCBs near SWMU No. 5; and Tank T4 indicated a level 17,000 mg/kg of TPH and 16 mg/kg of PCBs (SWMU No. 4).

Date of Start-up

The facility began operations in 1952 it is unknown when units actually began operating.

Date of Closure

Still in operation with the exception of TA5 which was taken out of service in 1992 due to leaks in the tank. No scheduled date for closure of these units.

Waste Managed

Used oil and oily water.

Release Controls

Historically, there has been no secondary containment systems for tanks at the Dico Oil Corporation facility. According to Richard

Cowan he plans to replace all the existing tanks and install all new tanks due to the age and condition of the tanks. Details of these changes have not been formally submitted to the DTSC.
When a tank is to be filled to capacity or has the potential to be filled to capacity, waste feed cutoff is conducted in the following manner to avoid overflow: the facility operator monitoring the amount of used oil when filling the tank is in constant visual or audio contact with the transport vehicle operator or with another facility operator. When the liquid level approaches the top of the tank, a hand or audible signal is given to the operator to cease the transfer of liquids. The feed stream will be shut off or transferred to another tank. All tanks are covered to prevent overfilling due to rainfall. All tanks have a portal that vents to the atmosphere.

History of Release

Documented evidence of releases from these tanks was not found in the file review.

Release Potential

Soil: Potential for release to soil from these units is high due to the age and condition of the tanks and the absence of secondary containment exists.

Groundwater: Potential for release to groundwater from these units is thought to be high.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: These tanks vent directly to the atmosphere. Therefore, the potential for release to air from these units is high.

6.2 SWMU Nos. 7: Gun Barrel Storage Tank

Unit Description

This SWMU was deleted from the list after conducting the Visual Site Inspection it was discovered that this tank is the same as Tank TA5 (SWMU No. 5).

6.3 & 6.4 SWMUs Nos. 8-9: TANK PIT AREA #1 AND TANK PIT AREA #2

Unit Description

Two underground storage half-tanks with a capacity of 10,500 gallons each existed at the facility. They were removed in January 1987 and June 1988 in accordance with requirements of the Waste Management Division, Los Angeles County Public Works, for the removal of underground storage tanks. Tanks were discovered to be leaking due to heavy corrosion resulting in several holes and extensive deterioration and causing a potential subsurface threat. These tanks were treatment/storage tanks for crude oil and were open to the atmosphere. The tanks design consisted of the entire tank submerged below ground and only the top met the ground surface. According to Jaykim Engineers Inc. Assessment report, the tanks contained no leak detection or monitoring equipment and tank slugdge was removed on a regular basis. The tank removed in January of 1988 was performed by Precision Tank.

It was observed during the VSI that this area is now covered with fill soil and is overlaid with gravel. The area is approximately 469 square feet in size and some visible vegetation appeared.

SAMPLING

A sampling activity was performed by Precision Tank on June 15, 1988, in the excavated tank area to determine the extent of contamination. Four soil samples were collected in a circular excavation at depths below the base of the tank at : 10 feet (sidewall), 12.5 feet (sidewall), 14.5 feet (sidewall) and 15.5 feet (bottom). The samples were analyzed for total petroleum hydrocarbons using EPA 418.1 analytical method. The sample analysis results for the soil collected at 10 feet indicated 945 ug/g of petroleum hydrocarbons. The 12.5 feet sample indicated 27 ug/g of total petroleum hydrocarbons. The 15.5 feet sample indicated 19.7 ug/g of total petroleum hydrocarbon. The recommendations by the Engineering Geologist were: 1) over-excavate the pit vertically and laterally to remove the majority of the contaminated soil at this location. 2) remove and dispose of all the hazardous soil to a TSD facility. 3) collect additional samples to verify that all contaminated soil was removed from the pit area.

Sampling results from the VSI revealed high levels of TPH for the area stragetically located between Tank Pit Area #1 and #2. The sampling indicated a level of 23,000 mg/kg of TPH. Volatile Organics and Semi-Volatile organics were also detected in this area.

Date of Start-up

The facility began operations in 1952 it is unknown when these tanks actually began operating.

Date of Closure

January 1987 for UGST Area #1 and 1988 for UGST Area #2. Area is currently not being used in facility operations.

Waste Managed

Crude Oil, Residual and Cracked Fuel Oils and Used oil.

Release Controls

The two underground storage half-tanks were not equipped with secondary containment. It is not believed that controls for release to soil and groundwater were in place. The tank was open to the atmosphere.

History of Release

Contamination was documented in the soil beneath and around the perimeter of the tanks. There is no documentation in the files that suggest groundwater is contaminated.

Release Potential

Soil: Releases to soil has been documented. The potential for future releases to soil is high.

Groundwater: Potential for release to groundwater is high.

Surface Water: Potential for release to surface water is high due to the possibility of run off or

spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for past release to air during operation, excavation and tank removal was likely high. No current potential for release to air exists.

6.5 SWMU No. 10: TRENCH WITHIN TANK FARM

Unit Description

The DTSC inspection report dated December 12, 1993 (revised) reported a four foot deep trench that had been dug to facilitate runoff and oil spillage flow. The piping system was exposed within the trench area. Soils contaminated with polychlorinated biphenyl (PCBs) were found within the trench during a sampling activity conducted by the DTSC during this inspection. Soil samples revealed levels of 3500 parts per million (ppm) and 4400 ppm of PCBs.

The total area contained within the trench is approximately 412 square feet. During the VSI, the area was observed to be divided into sections. Two thirds of the trench is rectangular in shape and the other one third is triangular in shape. Parts of the trench are lined with aluminum siding which acts as a barrier along the walls of the trench. The aluminum is 2.2 feet high and covers all the sides of the trench except the south side wall. The total height of the trench is approximately 3.1 feet.

There is a small waste oil tank that sits within the trench on a concrete pad. The tanks holds approximately 110 gallons and the concrete pad is 71.5 sq.ft. in size. The trench was observed to have small amounts of liquid located within the bottom and the sides were heavily stained with oil.

SAMPLING

Two soil samples were collected from this trench area. The analysis results from the samples revealed one sample contained a level of 3500 ppm of polychlorinated biphenyl (PCBs). Another repeat sample from the same location produced an analytical result of 4400 ppm PCBs. A previous inspection prior to 1993 identified soil on the facility contaminated with PCBs. The facility has been operating for over forty years as used oil recycler without proper secondary containment and tank maintenance.

The soil sampling results from the VSI indicated high levels of TPH PCBs and Metals within the trench. A level of 69,000 mg/Kg of TPH, 7.5 ppm of PCBs and 2300 mg/Kg of lead were detected. The sampling results also indicated semi-volatile and volatile organics were also present in the soil.

Date of Start-up

The facility began operations in 1952 it is unknown when this unit actually began operating.

Date of Closure

The unit is currently in operation and has no anticipated closure date.

Wastes Managed

Rain water run-off and used oil spills.

Release Controls

The trench is lined with aluminum sheeting that would provide minimal control if run-off and used oil spillage should occur.

History of Release

Contamination was documented in the soil within the trench located between tanks T3 and T4 (SWMUs 3 and 4).

Release Potential

Soil: Releases to soil has been documented. The potential for future releases to soil is high.

Groundwater: Potential for release to groundwater is high.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for past release to air during soil excavation was likely low. The trench is open to the atmosphere. Potential for release to the air exists and is likely to be high.

6.6 SWMU No. 11: Berm of Soil Surrounding Tank Farm

Unit Description

The DTSC inspection report dated December 12, 1993 (revised) describes a dirt berm (containment wall) that surrounds the entire tank farm. The soil berm is covered with visquene throughout the entire perimeter. During the VSI it was discovered that the berm contains approximately 280 cubic yards of soil. The soil used to construct the berm was soil excavated from the trench that was dug for run-off and oil spills. A portion of the soil on the berm came from excavation of soil from the trench (SWMU No. 10) and the underground storage tanks (SWMU Nos. 8 & 9) that were removed and contained contaminated soil.

Sampling results from the VSI indicated a level of 690 mg/Kg of TPH and volatile organics were also detected in the soil sample collected in this area.

Date of Start-up

The facility began operations in 1952 it is unknown when this unit actually began operating.

Date of Closure

The unit is currently in operation and has no anticipated closure date.

Wastes Managed

Rain water run-off and used oil spills.

Release Controls

The entire berm is covered with visquene that would produce some control if run-off and used oil spillage should occur.

History of Release

Contamination was documented in the soil contained within the berm.

Release Potential

Soil: Releases to soil has been documented. The potential for future releases to soil is high.

Groundwater: Potential for release to groundwater is high.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for past release to air during soil excavation was likely low. The entire berm is completely covered with visquene and is not open to the atmosphere. Potential for future releases to the air is likely to be low.

6.7 SWMU No. 12: Truck Loading and Unloading Area

Unit Description

The facility operates a concrete truck loading and unloading area. The loading/unloading area contains a sump. The size of the area of the truck pad is approximately 1,902 sq.ft.. This area has been paved since 1987. The cement pad has approximately a six inches of berm located along both sides of the pad in a north-south direction. The area is equipped with hoses that connect to transfer pipes for the tanks. There is also a small waste oil tank that can hold approximately 110 gallons next to the pad used to contain used oil drippings from the trucks while loading and unloading used oil. The area is usually operated in a one way direction through the facility.

It was observed during the VSI that the area was in good condition and contained no visible cracks. The hoses that are part of the piping system (SWMU No. 13) used to load and off-load used oil are color coded green and red, respectively. No sampling was conducted in this area due to overlaid concrete on the soil.

Date of Start-up

The cement pad was installed in 1987.

Date of Closure

This unit is currently operating and has no anticipated closure date.

Waste Managed

Used oil, oily water and rain runoff.

Release Controls

The unit consists of a concrete pad. The cement pad has a six inch berm on each side to contain liquid and prevent the surrounding soil to remain uncontaminated.

History of Release

No documentation of past releases of hazardous waste to the environment was found during the file review.

Release Potential

Soil: There is no documented releases to soil. No documented soil sampling is available prior to concrete pad being overlaid. The facility operated over thirty years prior to the construction of the concrete pad, therefore the potential release to soil is moderate.

Groundwater: The potential for release to groundwater from this unit is moderate.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for releases to air is low.

6.9 SWMU No. 14: Piping System

Unit Description

Pipelines are used throughout the facility; most are concentrated within the tank area to transfer oil to and from tank trucks and to and from storage tanks and process units. It was noted during the VSI that the piping and fittings were roughly 2400 feet in length. The location of the piping is aboveground and underground. The valves are controlled manually. The overall piping was in fair condition considering the age. According to Dick Cowan, the owner/operator of the facility, all of the piping are the original pipes that were installed when the facility was built with the exception of the filtering system which was installed about five years ago. Currently not all the pipes at the facility are not in use.

Historically, there has been no secondary containment systems for the piping and tanks at the Dico Oil Facility. The owner/operator Dick Cowan stated that the facility plans to upgrade their tank and ancillary equipment but has not to date submitted any documentation related to this activity to the DTSC as part of their permit process.

According to an inspection dated December 12, 1993 (revised), part of the underground transfer pipes contained within the trench (SWMU No. 10) are presently exposed. The inlet and outlet transfer pipes are identified by the colors green and red, respectively.
Information regarding the integrity of the piping system, age and design was not available for this analysis. The DTSC inspection report dated December 1993, suggest that due to poor housekeeping practices and age of the piping system, some of the pipes may be leaking oil directly on to the soil.

Date of Start-up

The facility began operation in 1952.

Date of Closure

This unit is currently operating and has no anticipated closure date.

Waste Managed

Most major waste type and materials managed at the site are moved by pipeline.

Release Controls

There are no release controls associated with this unit.

History of Releases

Documented evidence of release from this unit was found during the file review.

Release Controls

Soil: Releases to soil has been documented. The potential for future releases to soil is high.

Groundwater: Due to the estimated depth to groundwater the potential for release is high. The potential for

release to groundwater from the piping's past and present use is unknown.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for release to air is low.

6-10 SWMU No. 15: Hazardous Waste/Material Drum Storage Area

Unit Description

The facility has a hazardous waste/material storage area located near the west side of the facility. During the VSI, it was observed to contain ten (10) fifty-five gallon drums located within the drum storage area. Two of the drums contained soil contaminated with PCBs which was excavated from the trench area (SWMU No 10). The drum storage area is partially overlaid with a concrete pad. The drum storage area is approximately 557 sq.ft. in size. The drum storage area is not covered and does not have a berm, sump or sloping construction to properly contain spills. The drum storage area is constructed at the property boundary on the north-west side of the facility.

DTSC inspection report dated December 12, 1993 stated that the facility failed to obtain a hazardous waste storage permit or grant of authorization from the DTSC to operate a drum storage area. No sampling was conducted in this area during the VSI sampling activity due to the overlaid concrete within the area.

Date of Start-up

The facility has been in operation since 1952, the exact date that the drum storage area began operation is unknown.

Date of Closure

The unit is currently operating and has no anticipated closure date.

Wastes Managed

Drums which contain hazardous waste such as oil and sand, oily rags, greasy sludge, sump generated waste.

Release Controls

None. The unit is constructed with a concrete pad that does not drain to a sump.

History of Release

No documentation of past releases of hazardous waste to the environment was found during the file review.

Release Potential

Soil: The unit has a high potential for release to surrounding soil because it is only partially overlaid with concrete and has no berm, sump or sloping area to properly contain

spills.

Groundwater: The potential for release to groundwater from this unit is high.

Surface Water: Potential for release to surface water is high due to the possibility of run off or spillage from the site could be carried to local surface water via local storm drains.

Air: The potential for past release to air during operation is unknown. If drums and containers are stored with lids or covered, release potential to air is low.

6.11 SWMU No 16: Laboratory Satellite Accumulation Area

Unit Description

Laboratory wastes are accumulated for less than 90 days in the laboratory area. Details of current and past waste management practices are unknown. The laboratory analysis that is done on incoming loads of waste oil are: Chlordetect for halogens, gravity, BS & W, temperature and flash point. The laboratory analysis that is done for the out-going loads of recycled oil are done in a certified laboratory to determine if oil meets the recycled oil standards. Samples are stored on site. It was observed during the VSI that the laboratory and satellite accumulation area is contained in a building that is covered.

Date of Start-up

The facility has been in operation since 1952 it is unknown as to when the unit began operation.

Date of Closure

The unit is currently operating and has no anticipated closure.

Wastes Managed

Used oil, oily water and samples.

Release Controls

The unit is stored in a building that has a wooden floor.

History of Release

No documentation of past release of hazardous waste to the environment was found in the documents reviewed.

Release Potential

Soil: The potential for release from this unit is low.

Groundwater: The potential for release to groundwater from this unit is low.

Surface Water: There is no potential for release to surface water.

Air: Due to the sampling activity taking place inside a building there is no significant potential for release to air.

6.12 SWMU No. 17 & 18: PCB Soil Contamination Areas

Unit Description

These areas at the facility were identified through sampling activity conducted by the DTSC and a file review during the PR. A discussion of these areas have been addressed in several different sections of the RFA report, and will be omitted from the final list of SWMUs prepared for the RFA report.

6.14 SWMU No. 19: Sump in Loading/Unloading Area

Unit Description

The sump is located in the concrete truck loading and unloading area. The sump within this area was not previously documented in any information reviewed prior to the VSI. The sump is 6.76 sq.ft. and is square in shape. The sump has steel grid and does not appear to have a lining. This sump is used to contain run-off of any liquids which may accumulate within the loading/unloading area.

The sump is pumped out periodically when filled and the sump sludge is stored in fifty-five gallon drums and stored in the drum storage area (SWMU No. 15) prior to being transported off-site.

Date of Start-up

The concrete pad and sump were installed in 1987.

Date of Closure

This unit is currently operating and has no anticipated closure date.

Waste Managed

Used oil, oily water and rain runoff.

Release Controls

The sump is located in the loading/unloading area, which is constructed of concrete and has a six inch berm on each side to contain liquid and prevent run-on/run-off from the facility.

History of Release

No documentation of past releases of hazardous waste to the environment was found during the file review.

Release Potential

Soil: There is no documented release to soil available. There was no soil sampling done prior to concrete pad being overlaid. The facility operated over thirty years prior to concrete pad, therefore the potential release to soil is low.

Groundwater: The potential for release to groundwater from this unit is low.

Surface Water: Potential for release to surface water is low.

Air: The potential for past release to air during operation, is likely to be high due to the sump being open to the atmosphere. The current potential for release to air is high.

7.0 MIGRATION PATHWAYS AND HUMAN AND ENVIRONMENTAL RECEPTORS

The purpose of this section is to discuss the potential for human and environmental receptors that may be exposed to contaminants via media-specific migration pathways. Information presented will assist in determining the potential for releases from specific SWMUs that may threaten human health or the environment and enable the U.S. EPA and DTSC to set priorities for further corrective action.

This section first presents a summary of media and releases of concern as well as information on human and environmental receptors for the site. Migration pathways for soil, surface water, groundwater, and air are then discussed in subsections mentioning specific receptors that may be exposed.

The media for potential human and environmental receptor exposure to hazardous waste from the SWMUs identified are primarily groundwater and soil. The Dico Oil facility is located in an area in which the groundwater from the underlying aquifer is used for drinking water, the production well is located approximately one mile east of the site and is operated by the City of Long Beach. This well produces water from depths of approximately 300 to 900 feet. Although groundwater beneath the Dico facility is estimated to be present below depths of 150 to 200 feet, local perched ground water could be present at much shallower depths, particularly after the heavier than normal rainfall as occurred during recent winters.

A number of SWMUs appear to have a potential to contribute to groundwater contamination. These are primarily the SWMUs in the process area which include Storage/Process Tanks T1-T4, TA5 and TB (SWMU Nos. 1-6), the Piping System (SWMU No. 14), the Trench in the Process area (SWMU No. 10), the unpaved portion of the Drum Storage are (SWMU No. 15) and the Sump in the Loading/Unloading area (SWMU No. 19). Other SWMUs have a potential to contribute to

groundwater contamination, perhaps to a lesser extent. These are the Berm of Contaminated Soil which surrounds the facility (SWMU No. 11), Tank Pit Areas No. 1 & 2 (SWMU No. 9 & 10 respectively) and the Truck Loading/Unloading area (SWMU No. 12).

The potential for air contamination from the facility exists via two pathways: (1) volatilization of organics from the waste oils and wastewater process and storage tanks which vent to the atmosphere and (2) release to air of contaminated surface soil particulate via wind. There is no documentation in which a prior investigation of air contaminants has been conducted at the facility.

Several SWMUs have documented and/or visual evidence of releases or have a potential for release to soil that could be significant. The most significant of these include the process area SWMUs listed above, the two tanks which have leaked Tanks TA5 and T4 (SWMU Nos. 4 & 5), the trench in the process area (SWMU No. 10) and the Piping System (SWMU No. 14). A portion of the facility slopes and the majority of the facility has no secondary containment. Tanks have not been assessed to determine their structural integrity. The berm which surrounds the facility were constructed of contaminated soil.

7.1 General Human and Environmental Receptors

The Dico Oil facility is located in a highly commercial and residential area. The main street which borders the site are 27th Street to the north, Willow street to the south, Rose street to the west and Cherry Ave. to the east respectively. The site is physically bordered by Barto Oil formerly Texaco to the west which operates an oil extraction farm. The eastern portion of the site is bordered by residential homes; the closest is located approximately fifteen feet from the facility. This residence does contain grass, plants and flowers. The southern portion of the site is bordered by a vacant lot which is used a traffic route and exits on to 27th

street and owned by Barto Oil. The site is bordered to the north by a strip mall which houses offices and small businesses.

Humans (except employees) and animals are prevented from entering the facility during nonworking hours by a fence which surrounds the entire facility. The fence is secured by a gate which is locked during nonworking hours. A public road 28th Street, as mentioned does border the site to the south.

There is a potential for exposure to hazardous wastes by workers and during operations, and waste handling/disposal activities. safety procedures and personal safety gear are necessary to avoid such exposure. Due to a residence being located within fifteen feet of the facility boundary there is some potential for exposure of hazardous waste to humans and animals.

There is of rare plants present on the property. There are no wetlands or water courses adjacent to the facility making the presence of endangered species such as reptiles and animals unlikely. The closest sensitive area would be the Los Angeles River which lies approximately 1.8 miles to the west of the site. However, any spillage from the site could be carried to local storm drains and subsequently to the local surface water bodies. Likewise, storm run-off from the site could easily be carried to those bodies of water.

The site is located on the flank of Signal Hill, and lies outside of the 500 year flood plain and does not appear to be threatened by flooding.

7.2 SOIL MIGRATION PATHWAYS AND RECEPTORS

7.2.1 & 7.2.3 HUMAN RECEPTORS & ENVIRONMENTAL RECEPTORS

The potential exist for soil contamination to impact humans and animals due to the SWMUs identified and the close proximity of businesses and residential buildings. The potential for windblown contaminants to be carried offsite to adjacent residences and commercial businesses exist. This could also impact nearby residents and workers as well as contaminate locally grown food sources. However, onsite surface soils contamination have not been adequately characterized to date. Therefore, the significance of this potential is unknown.

7.3 SURFACE WATER MIGRATION PATHWAYS AND RECEPTORS

7.3.1 Human Receptors

The potential for human exposure to contaminants via surface water does not appear to be a direct discharge threat from the facility. The closest sensitive area would be the Los Angeles River which lies approximately 1.8 miles to the west of the site. However, any spillage from the site could be carried to local storm drains and subsequently to the local surface water bodies. Likewise, storm run-off from the site could easily be carried to those bodies of water.

7.3.2 Environmental Receptors

It is possible that animals could avail themselves of standing water in certain areas of the facility (e.g. Sump, Trench or paved

areas). However, the facility is fenced and no endangered or sensitive species are believed to inhabit the site area. The potential for wildlife species to be impacted from for site runoff is not considered significant.

7.4 Groundwater Migration Pathways and Receptors

The Dico Oil facility is located in an area in which the groundwater from the underlying aquifer is used for drinking water. The production well is located approximately one mile east of the site and is operated by the City of Long Beach. This well produces water from depths of approximately 300 to 900 feet. Groundwater flow direction in the vicinity of the site is roughly estimated to be to the east or northeast direction. Although groundwater beneath the Dico facility is estimated to be present below depths of 150 to 200 feet, local perched ground water could be present at much shallower depths, particularly after the heavier than normal rainfall that has occurred during recent winters. The Bellflower aquitard (a zone of lower permeability) is probably present beneath the site and might slow the vertical migration of contaminants into the lower aquifer units, although it would not preclude the migration of contaminants particularly if solvents are present.

Several SWMUs have documented and/or visual evidence of soil contamination and several SWMUs have a high potential for release to groundwater via leaching of contaminants from the soil. Further investigation is necessary to assess the actual threat to groundwater. The production well, as mentioned above, supplies water to the surrounding residential areas to the facility.

7.4.1 Human Receptors

No documentation of contamination of the underlying drinking water aquifer is available for this report. The potential for impact to offsite water supply wells from contamination released from the facility exists. This contamination could impact the users of this well , i.e. human and animal. With the direction of groundwater flow being approximately east or northeast of the facility and the closest production well is located one mile east of the facility the potential does exist that the production well could be impacted by contaminated groundwater from the facility.

7.4.2 ENVIRONMENTAL RECEPTORS

The potential for groundwater contamination does exist and could impact local residents and domestic animals exist. No documentation of contamination of the underlying drinking water aquifer is available for this report. The potential for impact to offsite water supply wells from contamination released from the facility exists. This contamination could impact the users of this well , i.e. humans and animals. With the direction of groundwater flow being approximately east or northeast of the facility and the closest production well is located one mile east of the facility the potential does exist that the production well could be impacted by contaminated groundwater from the facility.

7.5 Air Migration Exposure Pathways and Receptors

The migration pathway for air is primarily downwind from a contaminant source. Prevailing winds are from the west/northwest and the south. The most probable route of exposure to humans relevant to the Dico Oil Corporation facility is through inhalation of contaminants released from process and storage units (if any)

carried downwind and from particulate settling on the ground. Dermal contact from soil or dust, ingestion from soil, and ingestion of foods containing bioaccumulated contaminants (if the residential site within fifteen feet of the facility has a garden where food is grown) are potential pathways.

Air monitoring has not been conducted at the Dico Oil Facility. The significance of releases to air of volatile and contaminated particulates the facility (if there is such a release) is unknown.

7.5.1 Human Receptors

The potential for VOC and fumes to carry offsite and impact local residents and domestic animals exist. Except for impacts to onsite workers, who would be required to wear respirators when working in confined areas, local residents and commercial business employees are the human receptors who would most likely be impacted. Air emissions from the site have not been considered to be significant to date.

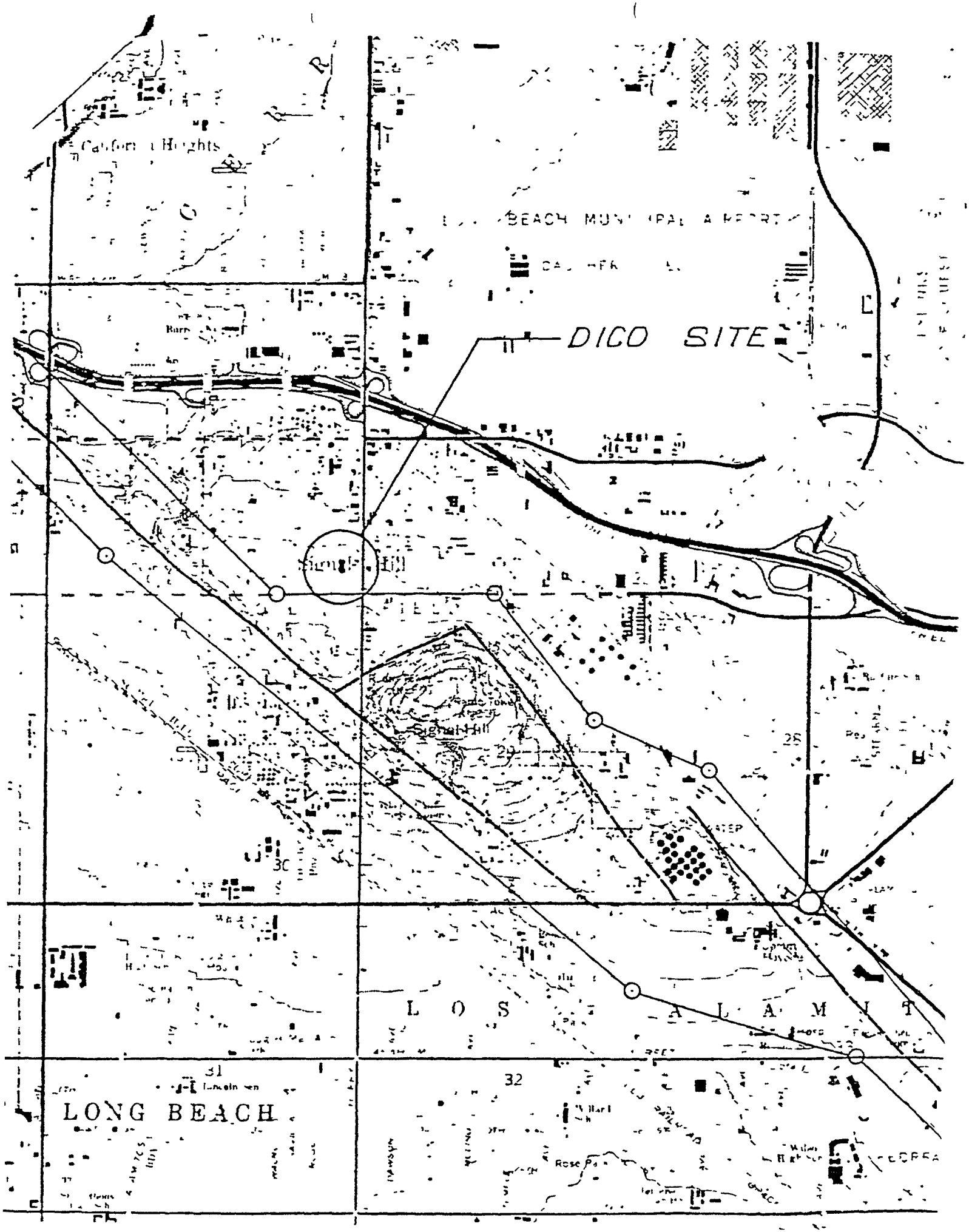
The potential for windblown contaminants to be carried offsite to adjacent residences and commercial businesses may exist. This could also impact nearby residents and workers as well as contaminate locally grown food sources. However, onsite surface soils contamination have not been adequately characterized to date. Therefore, the significance of this potential is unknown.

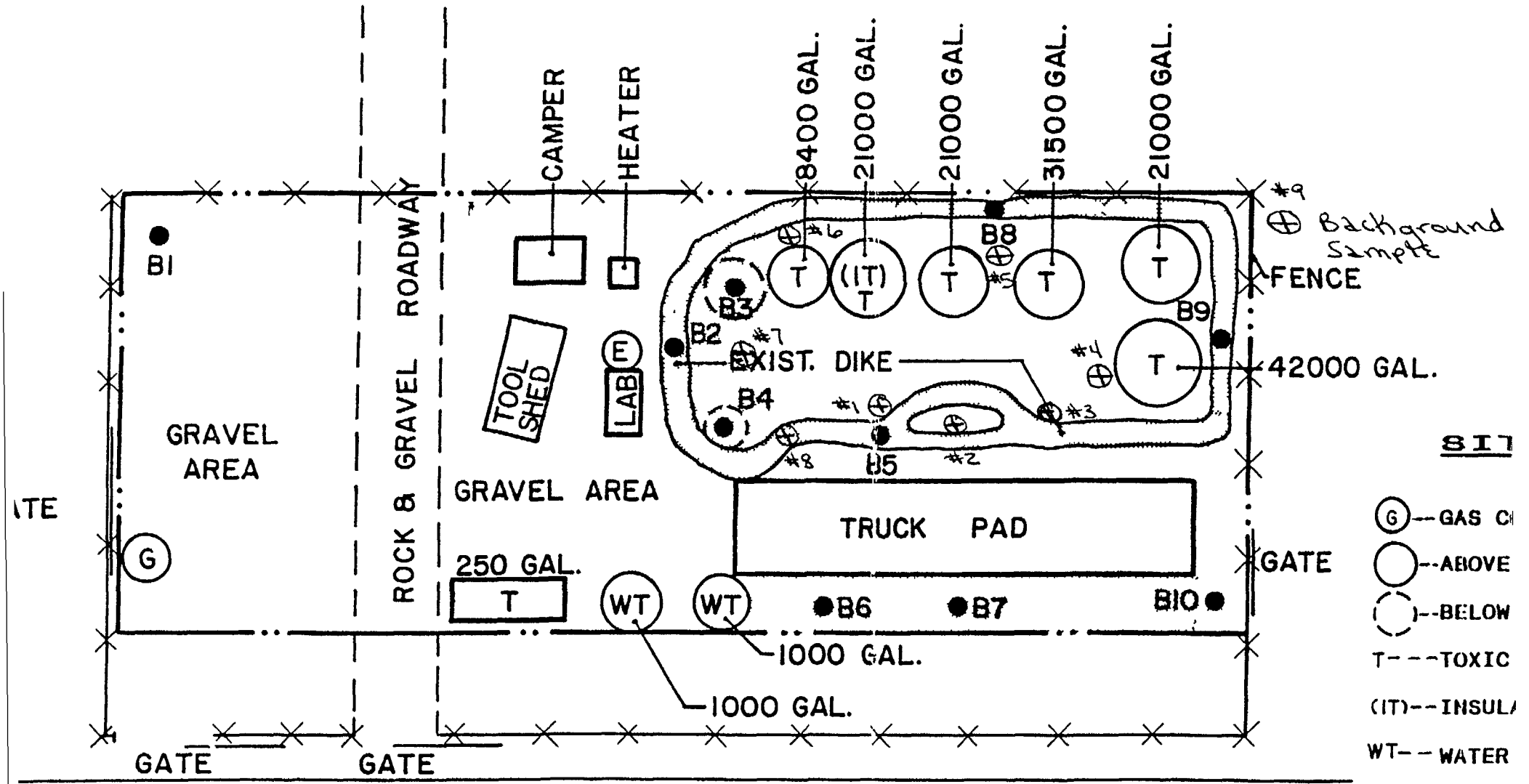
7.5.2 Environmental Receptors

The potential for process emissions and windblown particulate contaminants to damage wildlife or surrounding sensitive ecological habitats does not appear to exist.

APPENDIX A

FIGURES

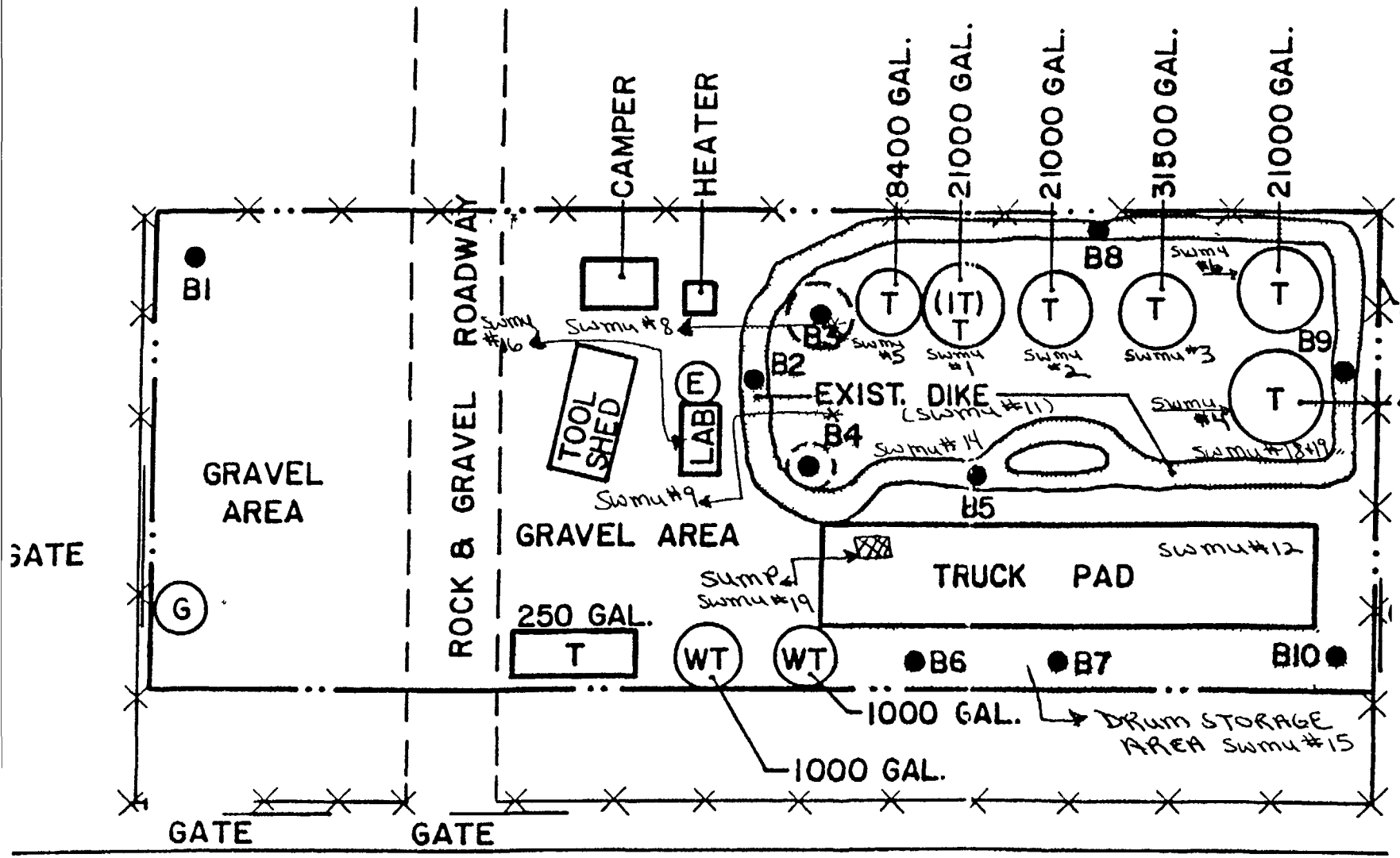

DICO SITE
LONG BEACH
L O S A L A M I T



ROSE AVENUE

⊕ = Sampling Points for Visual Site Inspection Sampling Activity

NORTH



ROSE AVENUE

NORTH

FINAL LIS

SWMU Unit No.	
1	PROCESS
2	PROCESS
3	PROCESS
4	PROCESS
5	PROCESS
6	PROCESS
7	GUN BAR
8	TANK PI
9	TANK PI
10	TRENCH
11	BERM SU
12	TRUCK L
13	WASTE P
14	PIPING
15	HAZARDO
16	LABORAT
17	PCB SOI
18	PCB SOI

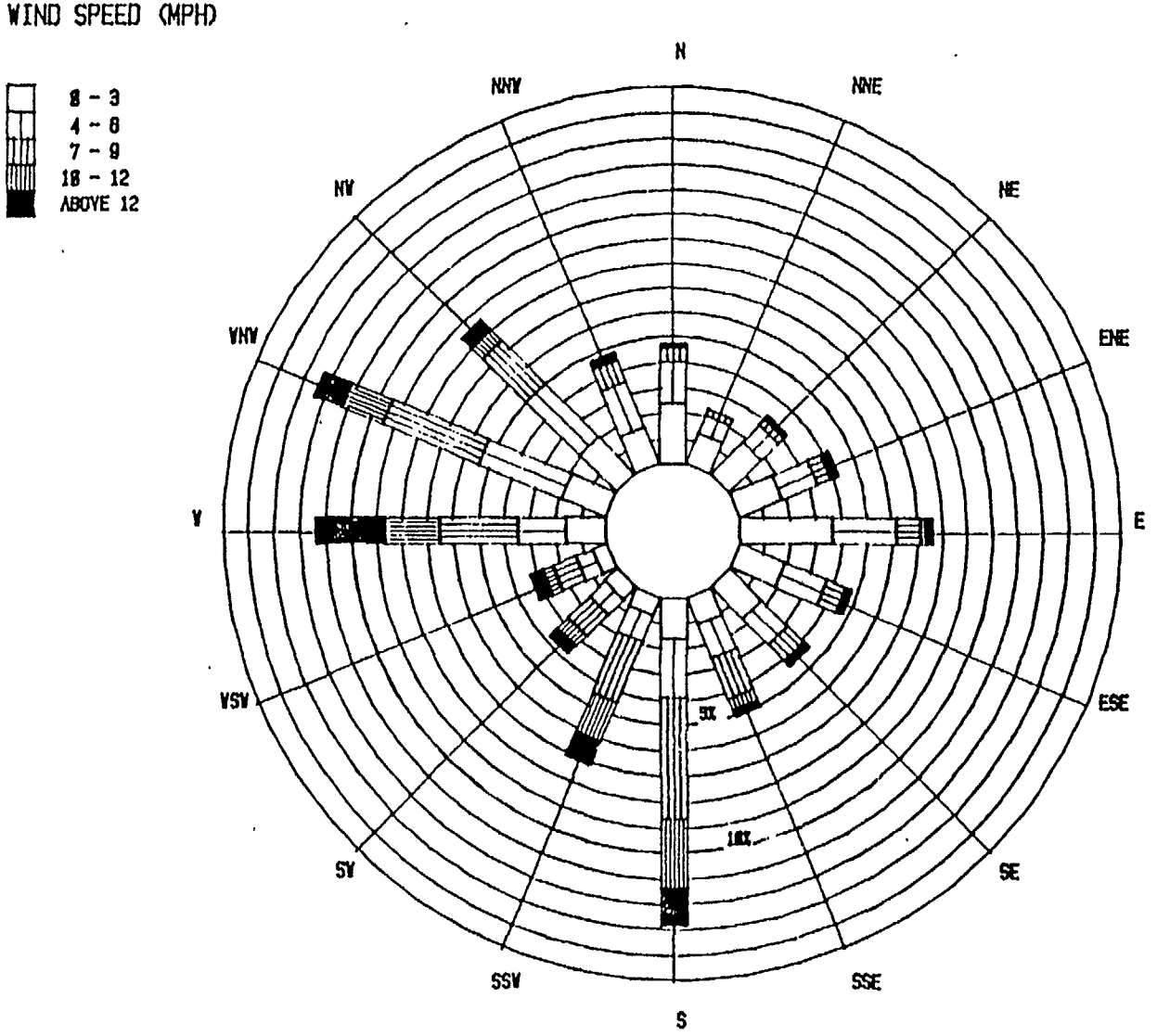


FIGURE A-2 WIND ROSE AT LONG BEACH AIRPORT (1956-1979)

APPENDIX B

TABLES

TABLE 1

FINAL LIST OF SOLID WASTE MANAGEMENT UNITS AT DICO OIL CORPORATION

SWMU Unit No.	NAME
1	PROCESS TANK T1
2	PROCESS TANK T2
3	PROCESS TANK T3
4	PROCESS TANK T4
5	PROCESS TANK TA5
6	PROCESS TANK TB
7	GUN BARREL TANK/STORAGE TANK (OMITTED FROM REPORT)
8	TANK PIT AREA #1 from (REMOVAL OF UGST)
9	TANK PIT AREA #2 from (REMOVAL OF UGST)
10	TRENCH WITHIN TANK FARM
11	BERM SURROUNDING TANK FARM (CONTAMINATED SOIL)
12	TRUCK LOADING/UNLOADING AREA
13	WASTE PILE OF SOIL (OMITTED FROM REPORT)
14	PIPING SYSTEM
15	HAZARDOUS WASTE DRUM STORAGE AREA
16	LABORATORY/SATELLITE ACCUMULATION AREA
17	PCB SOIL CONTAMINATION AREAS (OMITTED FROM REPORT)
18	PCB SOIL CONTAMINATION AREA (OMITTED FROM REPORT)
19	SUMP LOCATED in LOADING/UNLOADING AREA

TABLE 2
TREATMENT AND STORAGE TANKS
AT DICO OIL CORPORATION

		TANK DIMENSIONS		
SWMU No.	TANK I.D.	CAPACITY (gallons)	DIAMETER (feet)	HEIGHT (feet)
1	T1	21,149	15	16
2	T2	21,149	15	16
3	T3	28,071	14.1	24
4	T4	42,198	17.3	24
5	TA5	8,663	9.6	16
6	TB	21,149	15	16
Total		142,380		

SAMPLING VISIT SUMMARY

On April 25, 1994, a Sampling Visit (SV) was conducted at Dico Oil Corporation Facility. A total of nine (9) samples were collected including a background sample at the site. The results of the SV showed that there is strong evidence that the soil has petroleum hydrocarbon contamination in areas of the facility. These areas were within the tank farm and surrounding trench. Several samples results were ranging from 690 mg/Kg to 69,000 mg/kg of total petroleum hydrocarbon (TPH) The background sample for the site was also high in TPH, the results were 1700 mg/Kg. The highest readings of TPH were located in the trench near tank T4 which was discovered to be leaking during the Visual Site Inspection. The lowest was located on the soil berm which surrounds the tank farm. The high TPH sample results were located near tanks which were found to be leaking in the past.

The results of the sampling showed strong evidence that high levels of polychlorinated biphenyl (PCBs) present. Five of the nine samples revealed PCBs and four were above regulatory limits. The range detected was 1.1 mg/Kg to 360 mg/Kg of PCBs present in the soil. The highest readings were of PCBs were located in the tank farm near tanks T2, T3 and TA5. The sampling results for metals indicated a high concentration of lead, (2300 mg/Kg) was detected in sample number 2 which was extracted within the trench of the tank farm.

The sampling results also indicated that Volatile and Semi-Volatile Organics were detected in all the samples except two. The results of the analysis for the volatile organics (VOCs) indicated low levels. All but two of the soil samples (#s 1 and 3) showed levels of VOCs. The concentrations for Volatile ranged from 1.4 mg/Kg to 160 mg/Kg. The concentrations of the Semi-Volatile organics ranged from 2 mg/Kg to 130 mg/Kg. Therefore, the results of the SV showed that volatile organics pose no serious threat to the facility. The results from sample numbers two and four are questionable due to observations made during the sampling visit and visual site inspection. The samples results do not correspond to the observations made when the actual samples were collected.

Because petroleum hydrocarbon, PCBs and some heavy metal contamination was verified in the soil either visually, by sampling, or both, it is therefore recommended that Dico Oil Corporation further characterize the soil by conducting a RCRA Facility Investigation (RFI). The RFI will fully assess the nature and extent of the soil contamination both laterally and vertically.

The RCRA Facility Investigation which should include a soil vapor assessment, soil matrix sampling and vadose zone transport modeling.

Table 3: Sample Results of all 9 Samples Taken at Dico Oil Facility

Field Sample Number	Type of Sample	Location of Sample	pH and Flash Point	Volatile Organic Analysis (µg/L)	Halogenated Organics Compound	Metals (mg/kg)	PCBs (mg/kg)	Total Petroleum Hydrocarbon (mg/kg)	Semi-Volatile Organics (mg/Kg)	Comments
YMDO-01	Soil	Tank Farm Trench Area near Tanks T3 and T4	not tested	*	See VOA+PCB	*	*	*	*	Sample results do not correspond to observations made during visual site inspection and sampling activity.
YMDO-02	Soil	Tank Farm Trench below Tank T3	not tested	3,1-toluene 3.3-ethylbenzene 23-m&p xylenes 13-o-xylene 1.8-isopropylbenzene 3.0-n-propylbenzene 34-1,2,4-trimethylbenzene 4.6-sec-butylbenzene 6.5-p-isopropyltoluene 1.4-1,2-Dichlorobenzene 2.7-1,2,4-Trichlorobenzene 24-Naphthalene	See VOA+PCB	2300 -TTLC - lead	7.5	69,000	41-naphthalene 17-fluorene 45-phenanthrene 10-fluoranthene 19-pyrene 11-Benzo(a) Anthracene 17-chrysene 8-Benzo(b) Fluoranthene 9.6 Benzo(a) pyrene 130-2-Methyl Naphthalene	Sample was observed to be dark and oily.
YMDO-03	Soil	Tank Farm Trench Area	not tested	*	See VOA+PCB	*	*	*	*	Sample was observed to be dark and oily
YMDO-04	Soil	Taken at Base of Tank T4	not tested	1.4 m&p xylenes 1.5-1,2,4-Trimethylbenzene 6.7-1,2,4-Trichlorobenzene	See VOA+PCB	*	16	17,000	7.0-1,2,4-Trichlorobenzene 2-Pyrene	Sample was observed to be dark and oil; strong odor.
YMDO-05	Soil	Strategically taken in between Tanks T2 and T3	not tested	160-Toluene 8.7-Benzene 11-Methylene Chloride 15-Tetrachloroethene 27-Ethylbenzene 99-m&p xylenes 43-0-xylene 15-1,3,5-Trimethylbenze 38-1,2,4-Trimethylbenze 114-1,2,4-Trichlorobenzene	See VOA+PCB	*	360	4,300	*	Sample observed to be dark brown and slightly oily.

*** Samples results were below detection limits of the EPA testing method or non-detects.**

Table 3: Sample Results of all 9 Samples Taken at Bico Oil Facility

Field Sample Number	Type of Sample	Location of Sample	pH and Flash Point	Volatile Organic Analysis (µg/L)	Halogenated Organics Compound	Metals (mg/kg)	PCBs (mg/kg)	Total Petroleum Hydrocarbon (mg/kg)	Semi-Volatile Organics (mg/Kg)	Comments
YMDO-06	Soil	Taken within 5 feet of base of Tank TA5	not tested	1.2 m&p xylenes 2.2-1,2,4-Trimethylbenzene	See VOA+PCB	*	24	29,000	5.4-Pyrene 6.3-Chrysene	Sample observed to be dark and oily.
YMDO-07	Soil	Tank farm where underground storage tanks were located	not tested	2.4 Toluene 2.0 Tetrachloroethene 5.7 m&p xylenes 5.2-0-xylene 4.2-1,3,5-Trimethylbenzene 6.6-1,2,4-Trimethylbenzene 2.0 - Naphthalene	See VOA+PCB	*	*	23,000	2-Naphthalene 6.1-Methyl Naphthalene	Sample observed to be dark and oily.
YMDO-08	Soil	Taken from north-west side of soil berm	not tested	22-Toluene 19-m&p xylenes 10-1,2,4 Trimethylbenzene 17-1,2,4 Trichlorobenzene	See VOA+PCB	*	*	690	*	Sample observed was a dark tan color; no odor.
YMDO-09	Soil	Background sample taken off-site at southeast corner of facility	not tested	9.9-Ethylbenzene 38-m&p xylenes 79-Toluene 15-0-xylene 11-1,2,4 Trimethylbenzene	See VOA+PCB	*	1 1	1,700	*	Sample observed to be brown; no odor.

* Samples results were below detection limits of the EPA testing method or non-detects.

Summary of the RFA Findings,
Ranked in Levels of Concern

SWMU No.	Description	PR	VSI	SV	RFI Priority
1	Tank T1	Med	High	High	High
2	Tank T2	Low	Med	Med	High
3	Tank T3	Low	Med	Med	High
4	Tank T4	High	High	High	High
5	Tank TA5	Low	Med	Med	High
6	Tank TB	Med	High	High	High
7	Gun Barrel Storage Tank Omitted from list of SWMUs.				
8	Tank Pit Area #1	Low	Med	Med	High
9	Tank Pit Area #2	Low	Med	Med	High
10	Trench in Tank Farm	High	High	High	High
11	Berm around Tank Farm	Med	Med	Med	Med
12	Truck Loading/ Unloading Area	Low	Med	Med	Med
13	Waste Pile of Soil omitted from list of SWMUs.				
14	Piping System	Med	High	High	High
15	Haz Waste Drum Storage Area	Low	Med	Med	Med
16	Laboratory/	Low	Low	Low	Low
17	PCB Soil Contamination Area	High	High	High	High
18	PCB and TPH Soil Contamination Area	High	High	High	High
19	Sump in Loading Unloading Area	Low	Med	Med	Med

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DICO OIL CORPORATION
SIGNAL HILL, CALIFORNIA
RCRA FACILITY ASSESSMENT
VISUAL SITE INSPECTION PHOTOGRAPHS

Photographer:Carol Green
Date: March 30, 1994

DICO OIL CORPORATION
Signal Hill, California
RCRA Facility Assessment

Photographer: Carol Green
Date: March 30, 1994

Photo No. 1	Photograph of entrance.
Photo No. 2	Photograph of entrance looking south.
Photo No. 3	Photograph of entrance looking north.
Photo No. 4	Photograph of hazardous waste sign posted outside of facility.
Photo No. 5	Process Tanks (T1-T4, TA5, TB). These tanks accept loads of waste oil. The primary process of the T1-T4, TA5, TB tanks in the dewatering and blending of waste oil.
Photo No. 6	Process/Storage Tank T1 (SWMU No. 1) insulated tank heat has not been used for over 15 years.
Photo No. 7	Associated piping
Photo No. 8	Process/Storage Tank T2 (SWMU No. 2). This tank is currently operating.
Photo No. 9	Another picture of Tank T2. Notice how tank has buckled and has bulges.
Photo No. 10	Associated piping with minor spills (SWMU No. 2).
Photo No. 11	Process/Storage Tank T3 (SWMU No. 3) currently operating.
Photo No. 12	Associated piping. Note the stained soil with oil and piping.
Photo No. 13	Process/Storage Tank T4 (SWMU Unit No. 4) currently operating - leaking failed on April 25, 1994.
Photo No. 14	Associated piping leaking onto ground.
Photo No. 15	Associated piping leaking onto ground.
Photo No. 16	Tank TA5 (SWMU No. 5) tank failed in 1992, notice condition of tank.

Photos
VSI

Photo No. 17	Excess corrosion and deterioration of the tank.
Photo No. 18	Tank TB (SWMU No. 6)
Photo No. 19	Associated piping some oil contamination in ground from spills.
Photo No. 20	Close up of cracks.
Photo No. 21	Tank Pit Area (SWMU No.'s 8 and 9)
Photo No. 22	Close up of Tank Pit Area (SWMU No.'s 8 and 9)
Photo No. 23	Section of Trench Area (SWMU No. 10), notice the standing water.
Photo No. 24	Notice the stained soil
Photo No. 25	Photo of contamination soil in trench
Photo No. 26	Another area of trench with contaminated soil
Photo No. 27	Piping within trench
Photo No. 28	Another section of trench
Photo No. 29	Contaminated soil berm covered with visouene (SWMU No. 11) looking north from west side of tank farm facility.
Photo No. 30	Looking north from east side of tank farm facility.
Photo No. 31	Looking west to east from front of tank farm.
Photo No. 32	Back side of tank farm looking west to east
Photo No. 33	Truck loading/unloading (SWMU No. 12) with sump, notice the stains of oil looking north to south.
Photo No. 34	View from gate truck unloading.
Photo No. 35	Looking north.
Photo No. 36	Piping system (SWMU No. 14), piping looking south from front of tank farm. Piping is color coded.
Photo No. 37	View looking north.
Photo No. 38	Piping in view trench (SWMU No. 10)
Photo No. 39	Loading/offloading vacuum pumps

Photos
VSI

Photo No. 40	Rusted and corroded piping
Photo No. 41	Hazardous Waste Drum Storage Area (SWMU No. 15) not permitted.
Photo No. 42	No berm around area (seven empty drums with no labels)
Photo No. 43	Four drums of excavated PCB soil in the drum storage area
Photo No. 44	Laboratory/Satellite Accumulation Area (SWMU No. 16) Picture of laboratory where analysis is done.
Photo No. 45	Laboratory/Satellite Accumulation Area (SWMU No. 16) Picture of laboratory where analysis is done.
Photo No. 46	Laboratory Building located near beginning of unloading.
Photo No. 47	PCB Soil Contamination Area (SWMU No. 17 & 18)
Photo No. 48	Notice the dirty/oily soil
Photo No. 49	Sump in loading/unloading area
Photo No. 50	Close-up of sump
Photo No. 51	110-gallon tank used for oil spills from off loading
Photo No. 52	Water tanks to the right
Photo No. 53	Container within trench
Photo No. 54	Exit from facility at southwest end of facility onto a vacant lot which exits onto Rose Avenue and 29th Street.

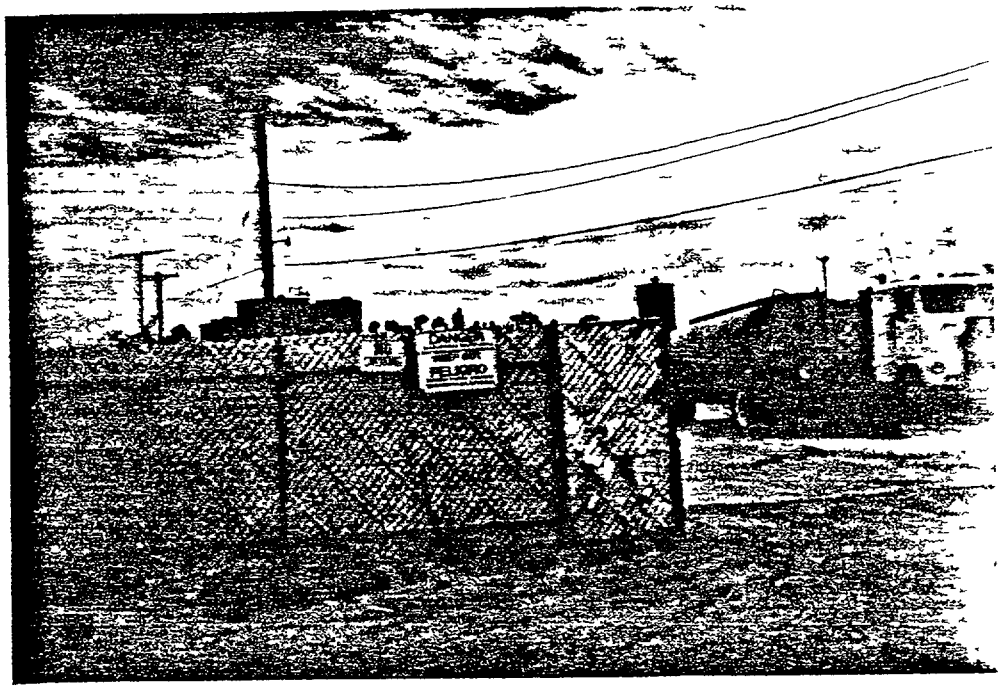
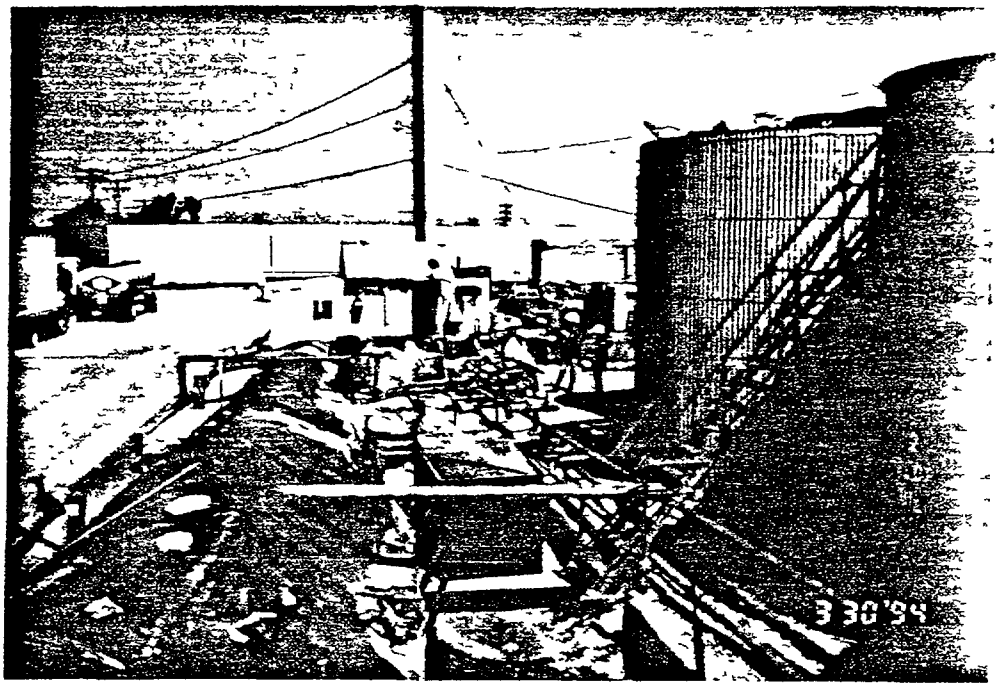


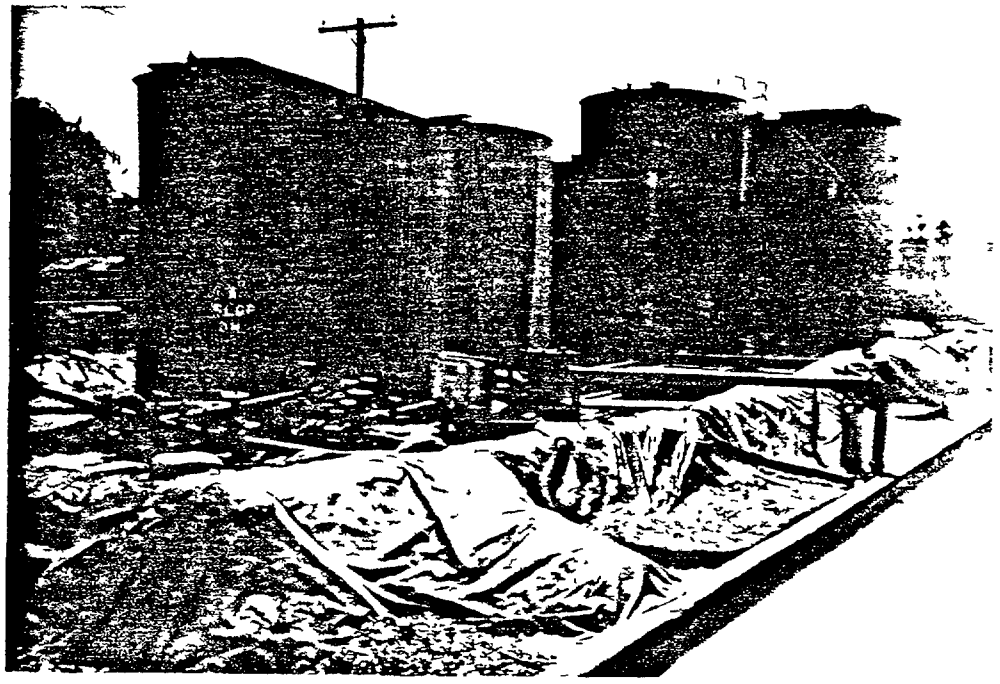
Photo No. 1 This photograph is an entrance to the facility. Notice the facility has a hazardous waste facility sign posted.

Photograph No. 2 This is a view of the facility 1 looking South. Notice the facility is situated on a slight incline.

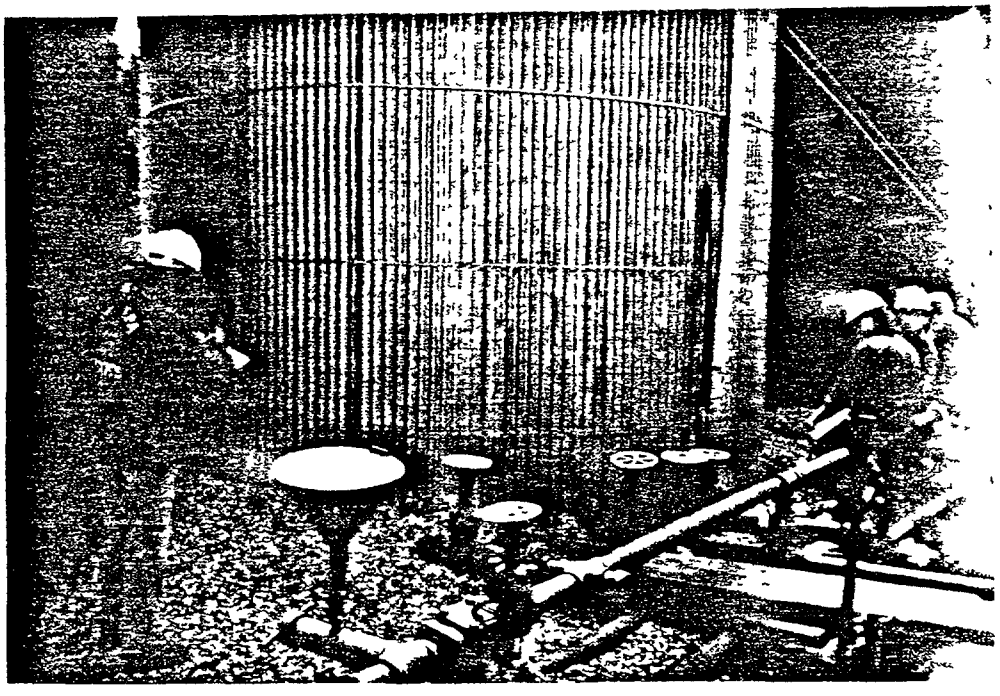


Photograph No. 3 This is a view of the facility looking North. Notice the tank farm has no secondary containment and the soil appears to be stained.

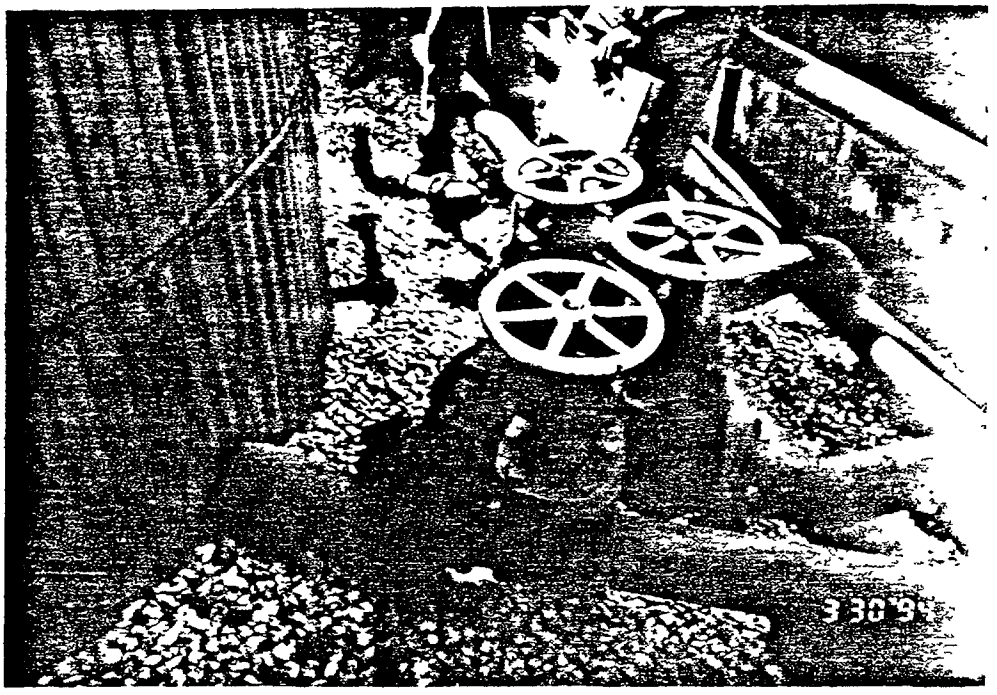
Photograph No. 4 Upclose view of the Hazardous Waste sign posted outside the facility.



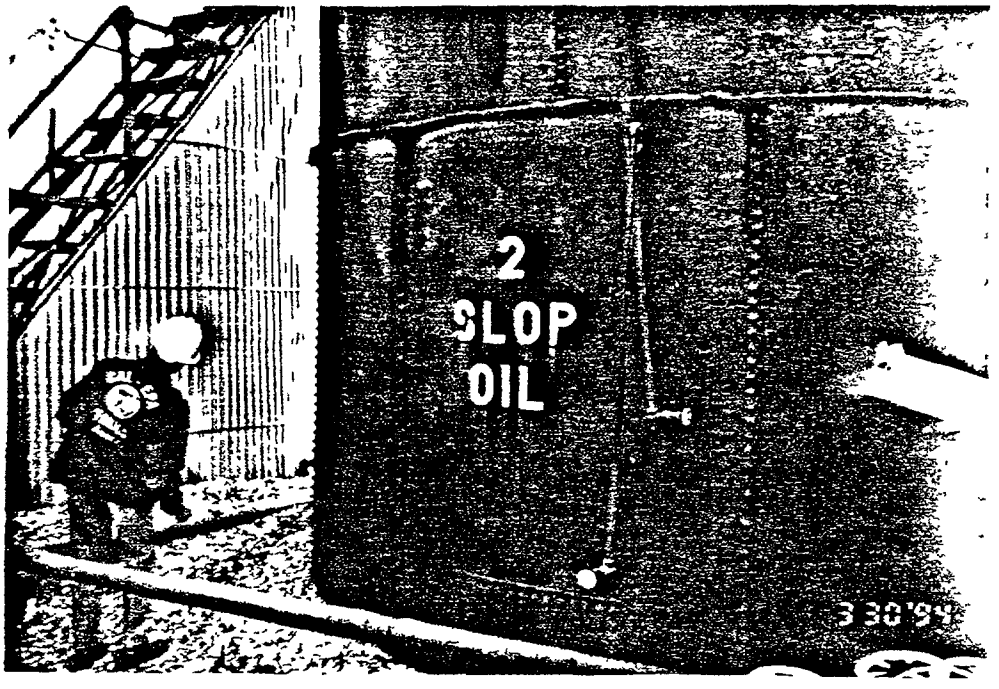
Photograph No. 5 This photographs contains Process/Storage tanks: T1-T4, TA5 and TB. Notice the tank farm contains no secondary containment and the Berm is composed of soil covered with visquene.



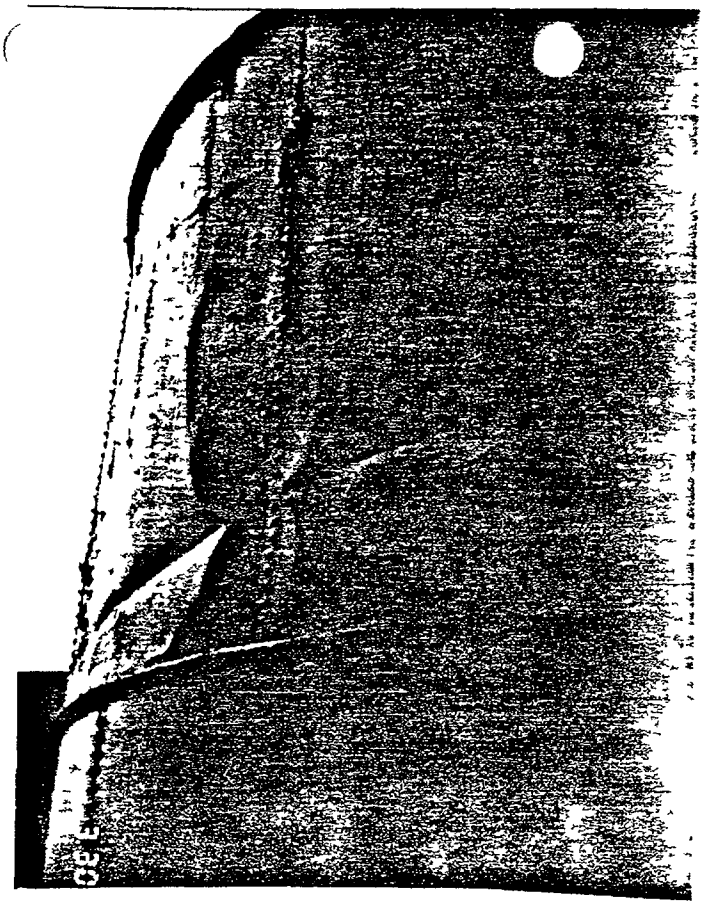
Photograph No. 6 This photograph is a close up of Process/Storage tank T1 **(SWMU No. 1)**. This tank is insulated but has not been in use for over 15 years.



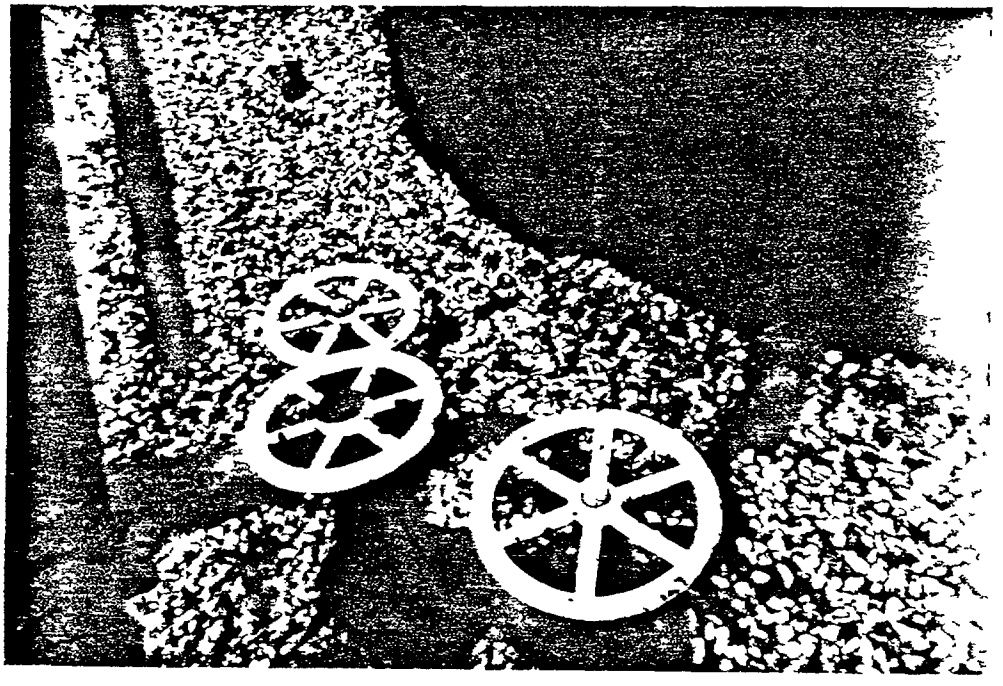
Photograph No. 7 This is a photograph of the associated piping for Process Tank T1 **(SWMU No. 1)**. Notice the oil stains on the gravel next to the piping.



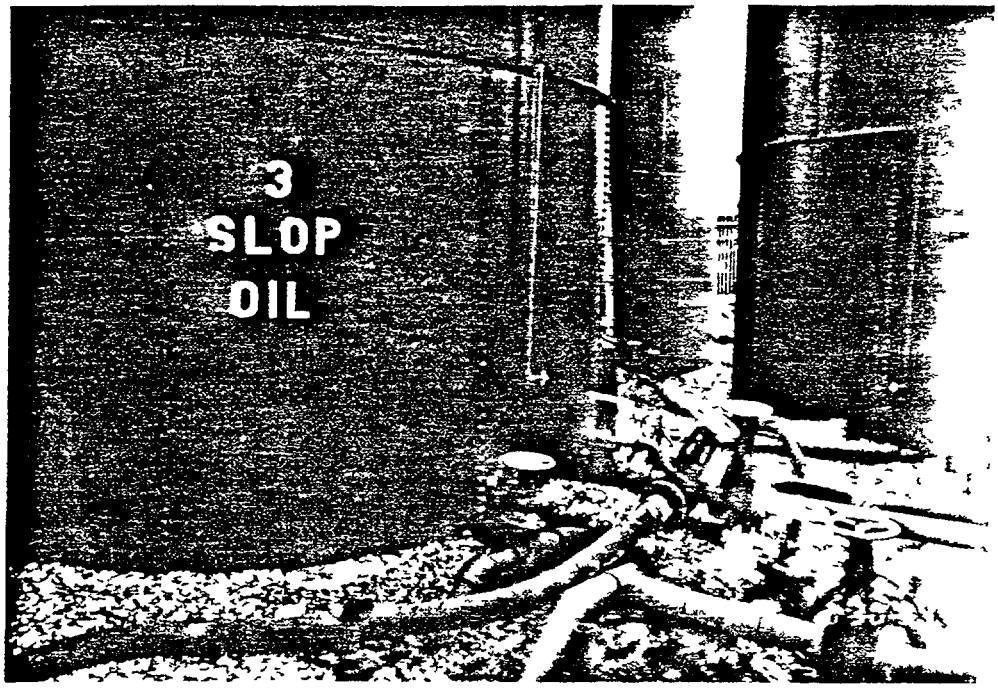
Photograph No. 8 This is a close up of Process/Storage Tank T2 **(SWMU No. 2)**. Notice this a riveted tank which has corrosion and is over 40 years old. The tank farm has no secondary containment



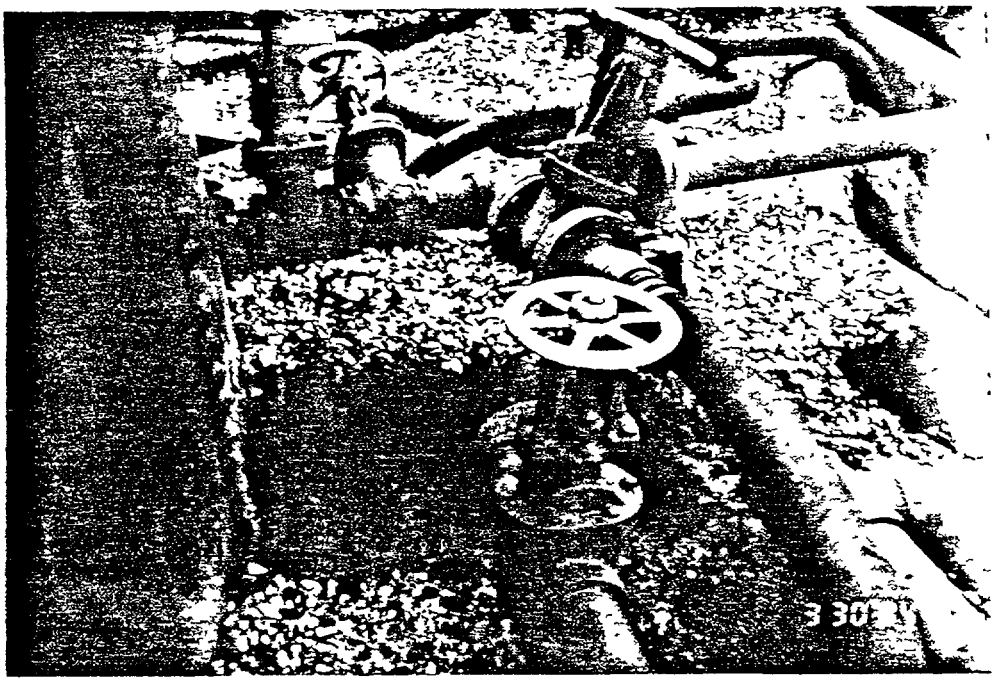
Photograph No. 9 This is a close up of Process/Storage Tank T2 **(SWMU No. 2)**. This tank is currently operating. Notice the buckling and poor condition of this riveted tank.



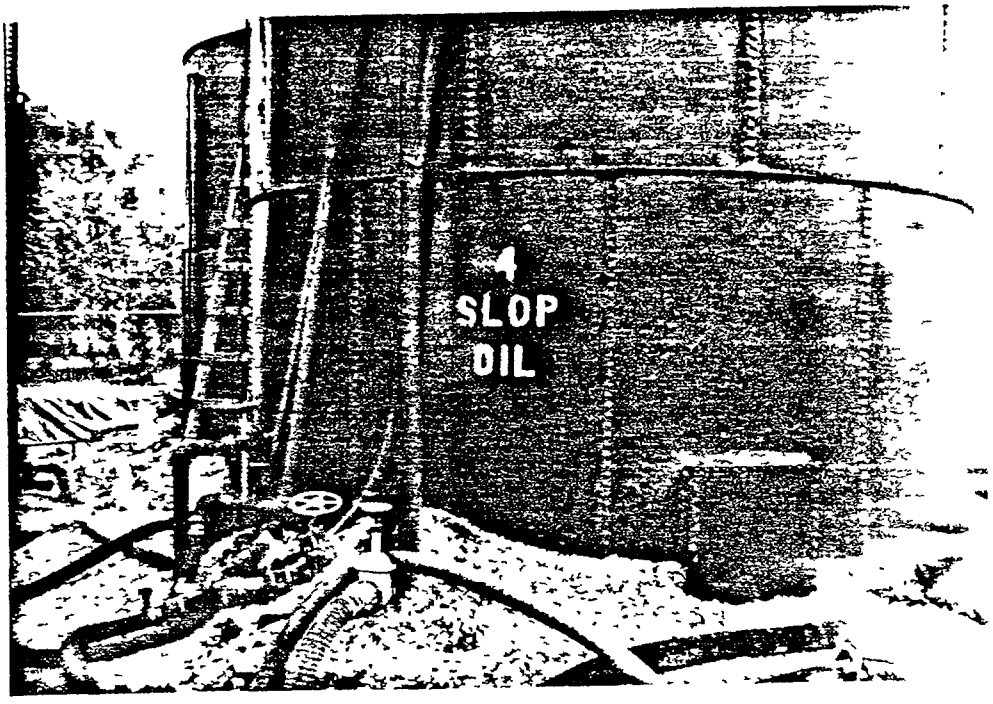
Photograph No. 10 This is a close up of the associated piping for Process/Storage Tank T2 **(SWMU No. 2)**. Notice the oil stains on the gravel due to leaks.



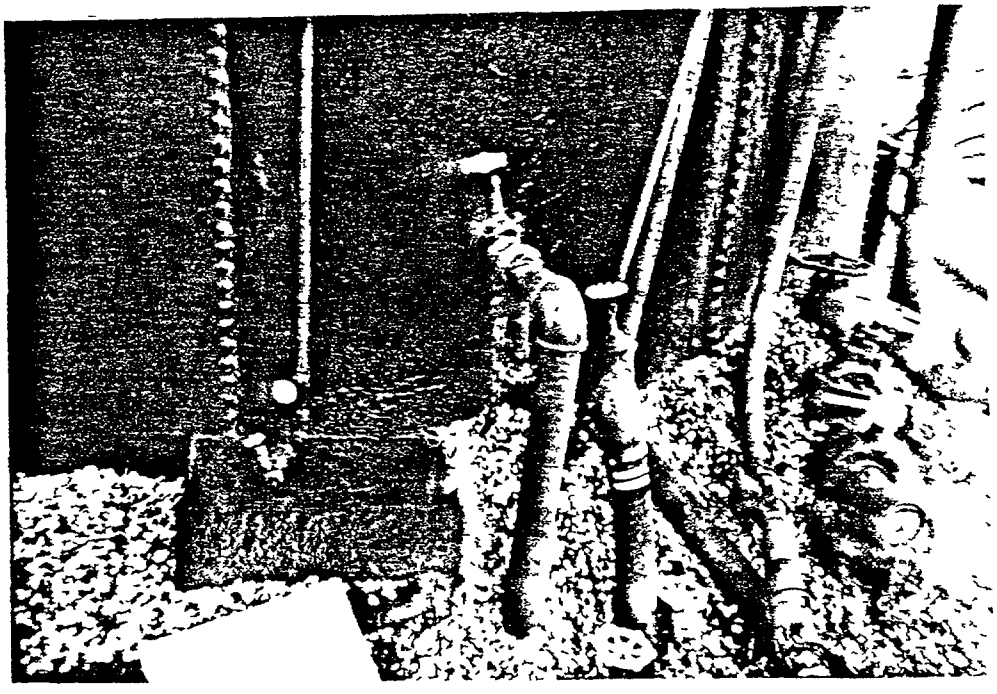
Photograph No. 11 This is a close up of Process/Storage Tank T3 **(SWMU No. 3)**. This tank is currently operating. Notice this a riveted tank which has corrosion and is over 40 years old.



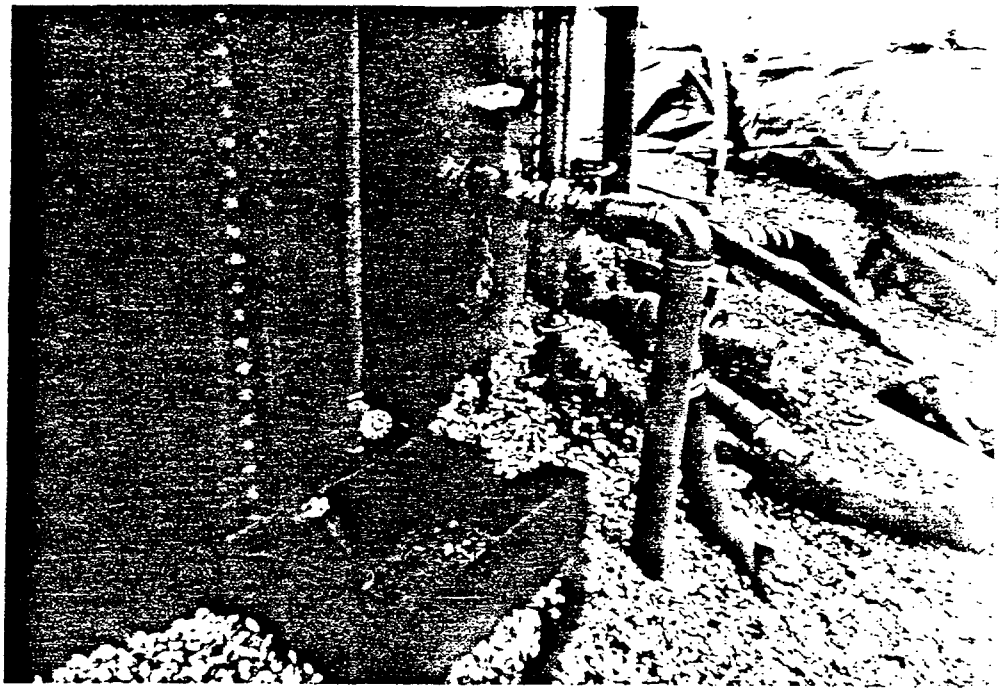
Photograph No. 12 This is a close up of the associated piping for Process/Storage Tank T3 **(SWMU No. 3)**. Notice the oil stains on the gravel due to leaks.



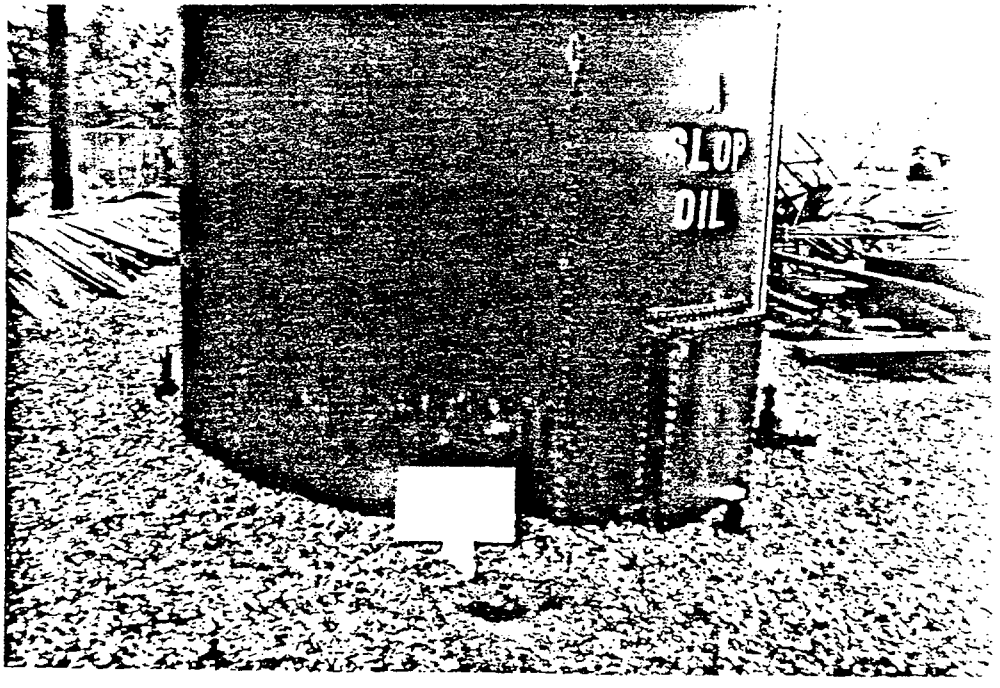
Photograph No. 13 This is a close up of Process/Storage Tank T4 **(SWMU No. 4)**. This tank was currently operating the day of the inspection. It was discovered to be leaking and was subsequently taken out of service.



Photograph No. 14 This is a close up of the associated piping for Process/Storage Tank T4 **(SWMU No. 4)**. Notice the oil stains on the gravel due to leaks.

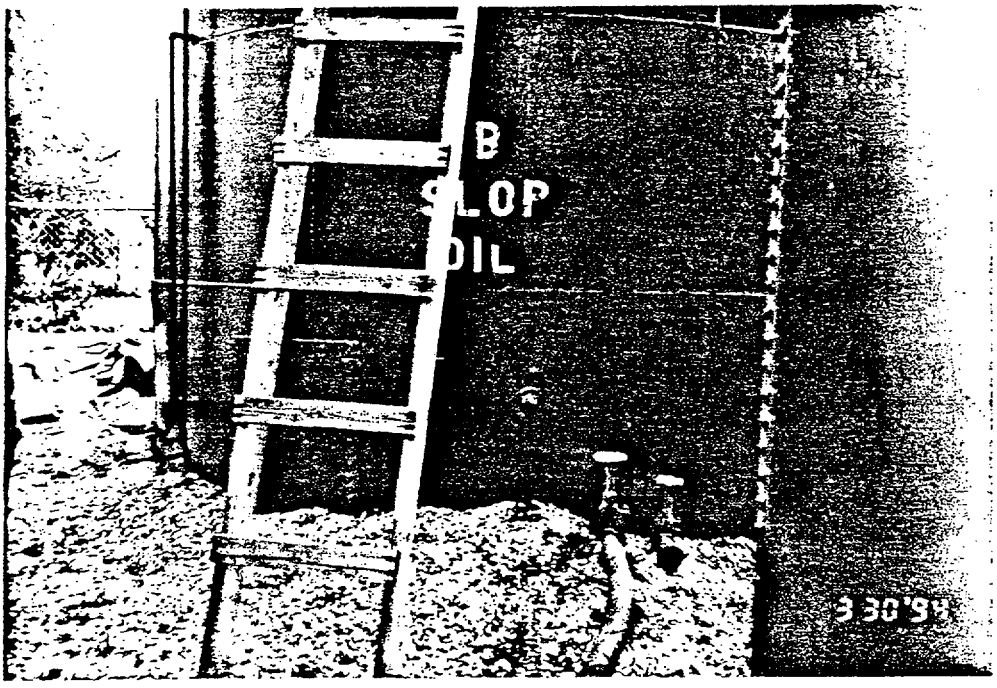


Photograph No. 15 This is a close up of the associated piping for Process/Storage Tank T4 **(SWMU No. 4)**. Notice the oil stains on the gravel due to leaks.

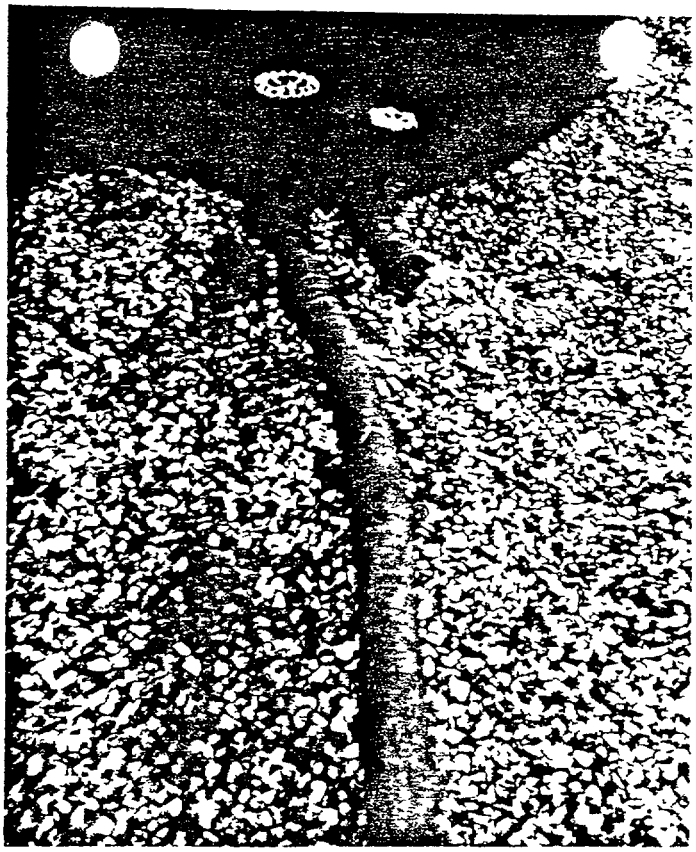


Photograph No. 16 This is a photograph of Process/Storage Tank TA5 **(SWMU No. 5)**. This tank failed in 1992. This a riveted tank which has severe corrosion and is over 40 years old.

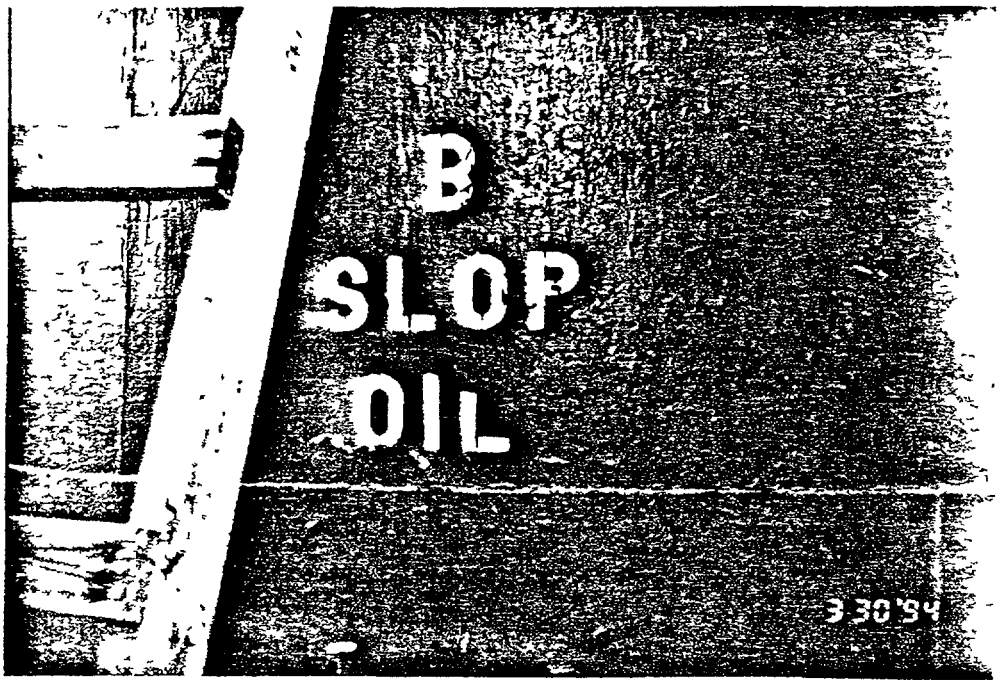
Photograph No. 17 This is a close up of Process/Storage Tank TA5 **(SWMU No. 5)**. Notice the severe corrosion of the tank. Notice the tank had several holes that contained plugs around the base.



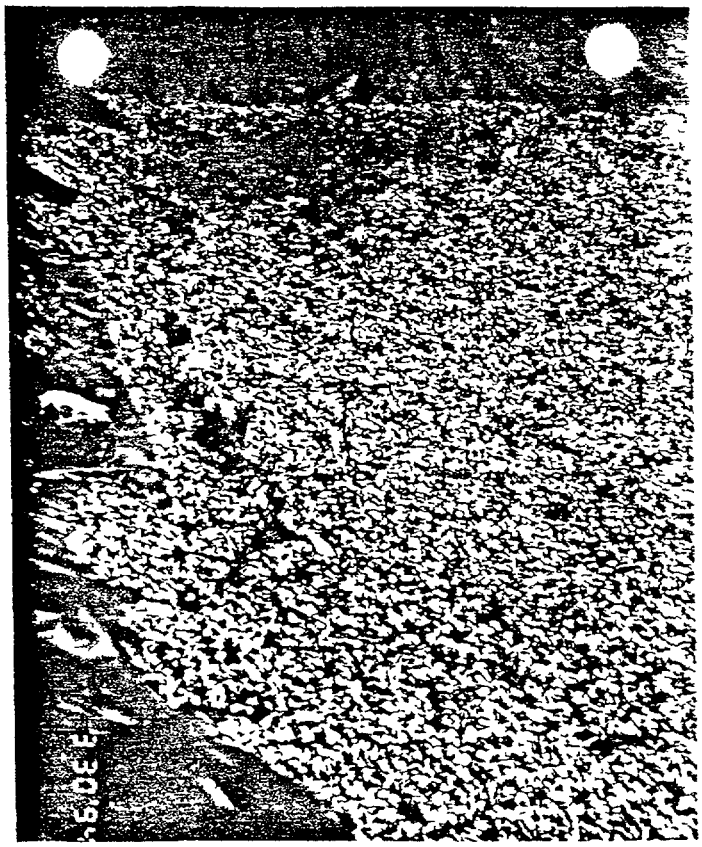
Photograph No. 18 This is a photograph of Process/Storage Tank TB **(SWMU No. 6)**. This a riveted tank and has corrosion and is over 40 years old. Notice the oil stains on the gravel near the piping.



Photograph No. 19 This is a close up of the associated piping for Process/Storage Tank TB **(SWMU No. 6)**. Notice the oil stains on the gravel due to leaks.



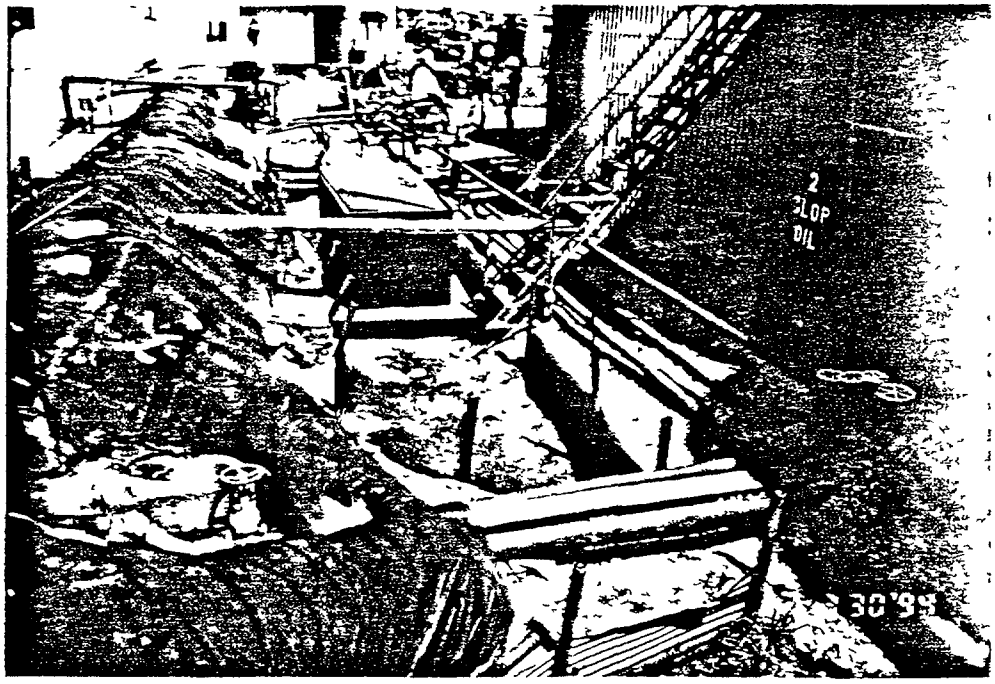
Photograph No. 20 This is a close up of Process/Storage Tank TB **(SWMU No. 6)**. Notice the cracks in the tank.



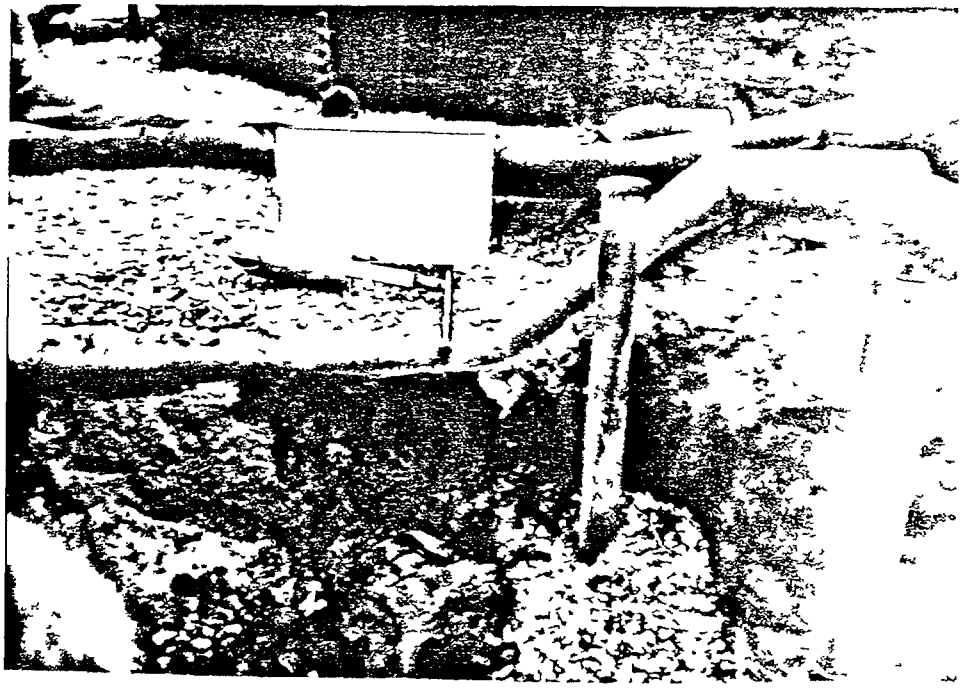
Photograph No. 21 This is a photograph of the Tank Pit Areas No. 1 and No. 2. **(SWMU No. 8 & 9 respectively)**. This area previously contained two underground storage half tanks that were removed due to leaks.

Photograph No. 22 This is another view of the Tank Pit Areas No. 1 and No. 2. **(SWMU No. 8 & 9 respectively)**. This area contained soil that appeared to be fill, there were few visible stains of oil.

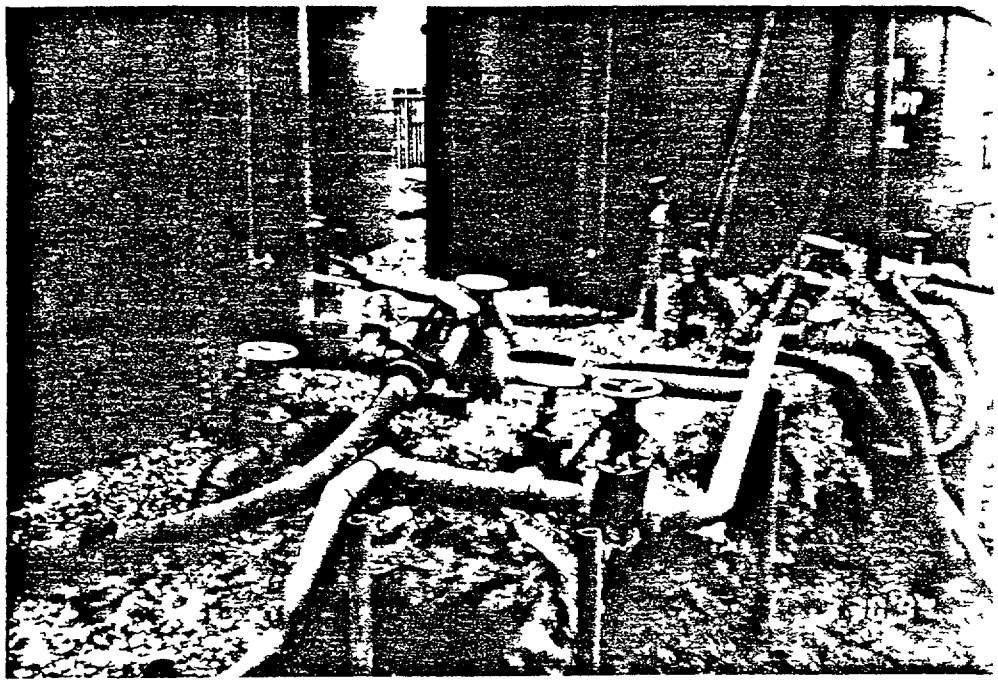
Photograph No. 23 This is a photograph of the Trench area contained within the tank farm **(SWMU No. 10)**. Notice the standing liquid that accumulates and the lack of proper containment.



Photograph No. 24 This is a another view of the Trench area contained within the tank farm **(SWMU No. 10)**. Notice there is no cement berm contained around this area.



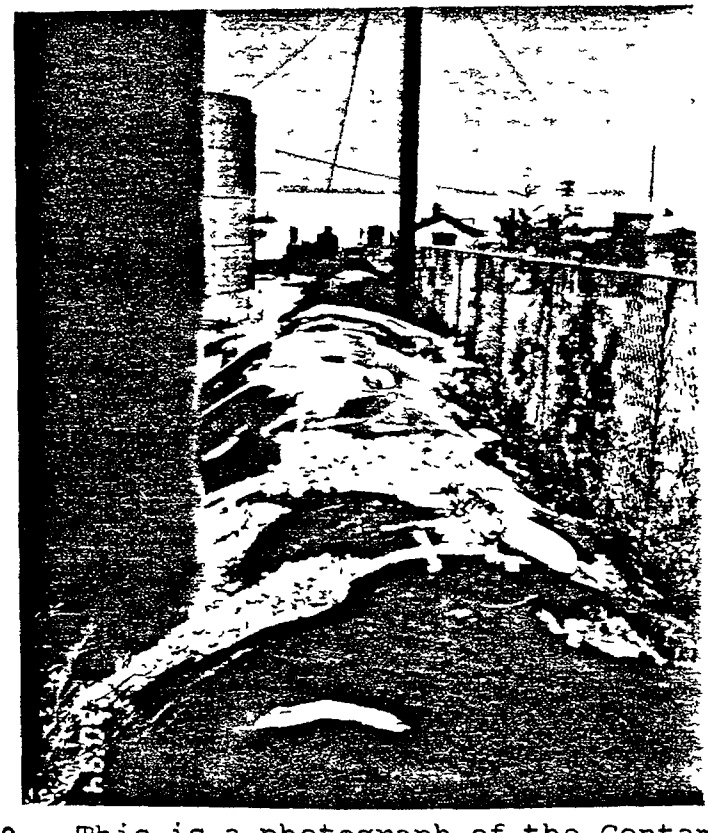
Photograph Nos. 25 & 26 These are photographs of the associated piping within the Trench area **(SWMU No. 10)** . Notice the dark and oily discoloration of the soil due to leaks within the tank farm . Notice the lack of proper secondary containment within the tank farm area.



Photograph No. 27 This is a photograph of the associated piping system within the Trench area **(SWMU No. 14)** . Notice the dark and oily discoloration of the soil due to leaks.

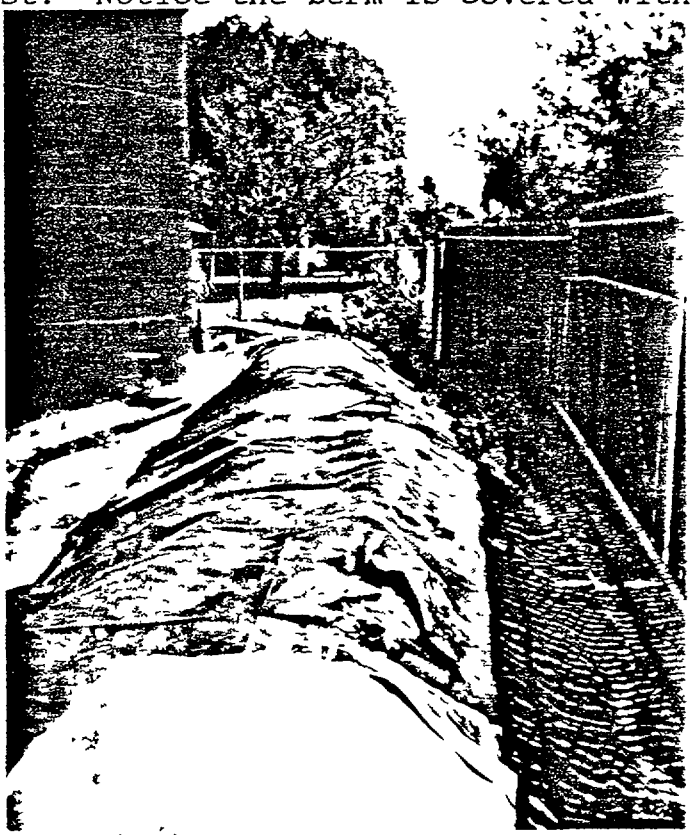
Photograph No. 28 This is a photograph of another section of the Trench area **(SWMU No. 10)** . Notice the dark and oily discoloration of the soil and the lack of proper secondary containment within the trench farm area.

Photograph No. 29 This is a photograph of the Contaminated Soil Berm which surrounds the facility **(SWMU No. 11)**. This view is looking North-west. Notice the berm is covered with visquene.

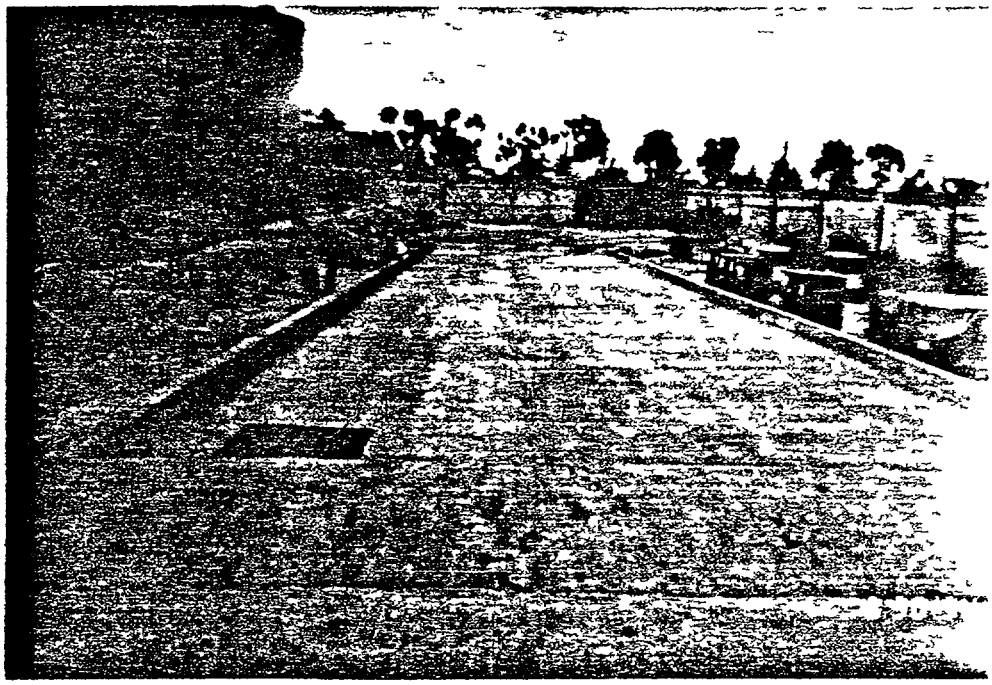


Photograph No. 30 This is a photograph of the Contaminated Soil Berm which surrounds the facility **(SWMU No. 11)**. This view is looking north-east. Notice the berm is covered with visquene.

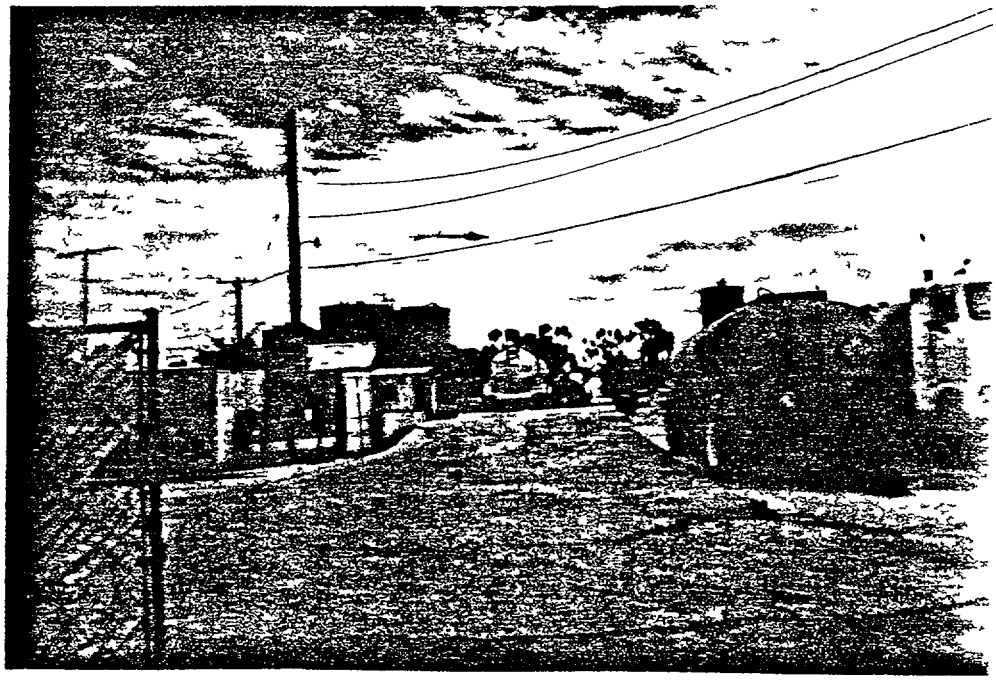
Photograph No. 31 This is a photograph of the Contaminated Soil Berm which surrounds the facility **(SWMU No. 11)**. This view is looking south-east. Notice the berm is covered with visquene.



Photograph No. 32 This is a photograph of the Contaminated Soil Berm which surrounds the facility **(SWMU No. 11)**. This view is looking south-west. Notice the berm is covered with visquene.

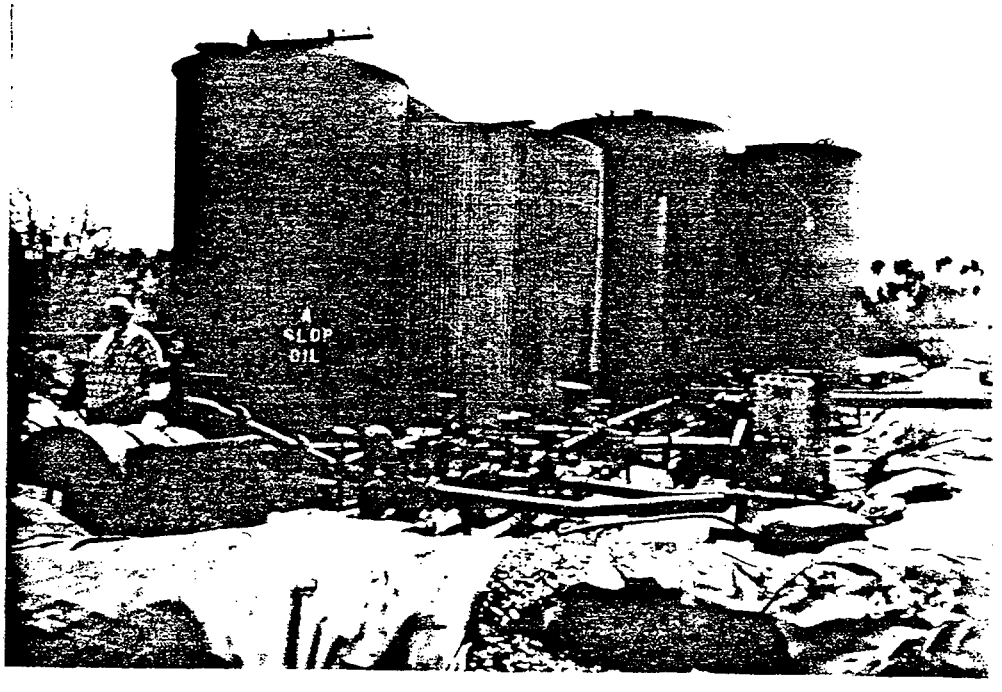


Photograph No. 33 This is a photograph of the Truck Loading/Unloading area within the facility **(SWMU No. 12)**. This view is looking south. Notice the stains of oil on the cement.



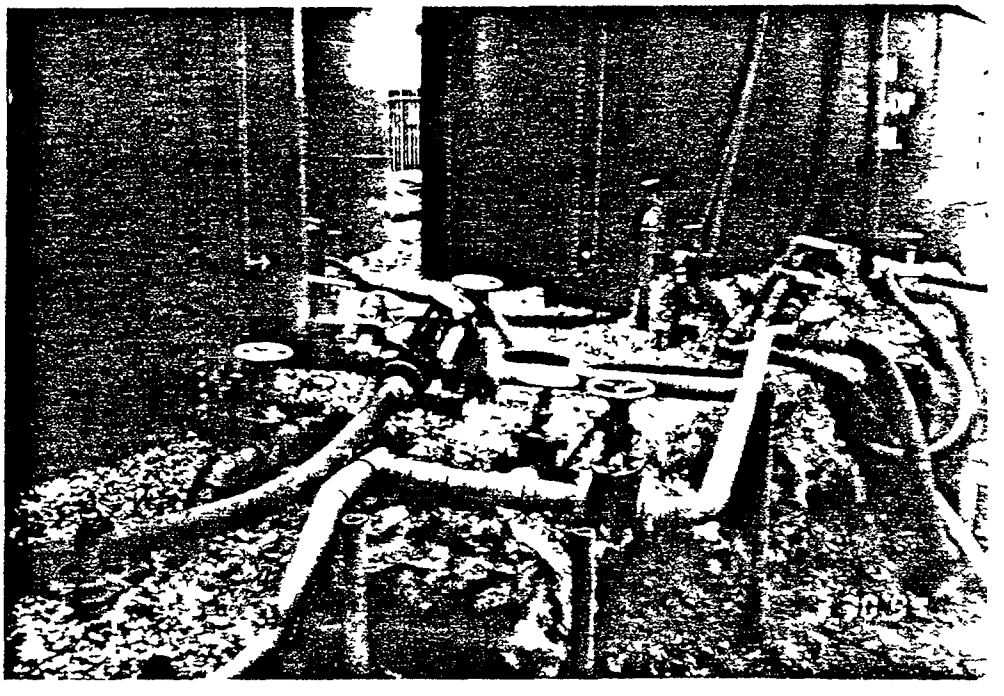
Photograph No. 34 This is another view of the Truck Loading/Unloading area within the facility **(SWMU No. 12)**. This view is looking south from the entrance of the facility.

Photograph No. 35 This is another view of the Truck Loading/Unloading area within the facility **(SWMU No. 12)**. This view is looking north. Notice the area is not paved down to the end of the facility.

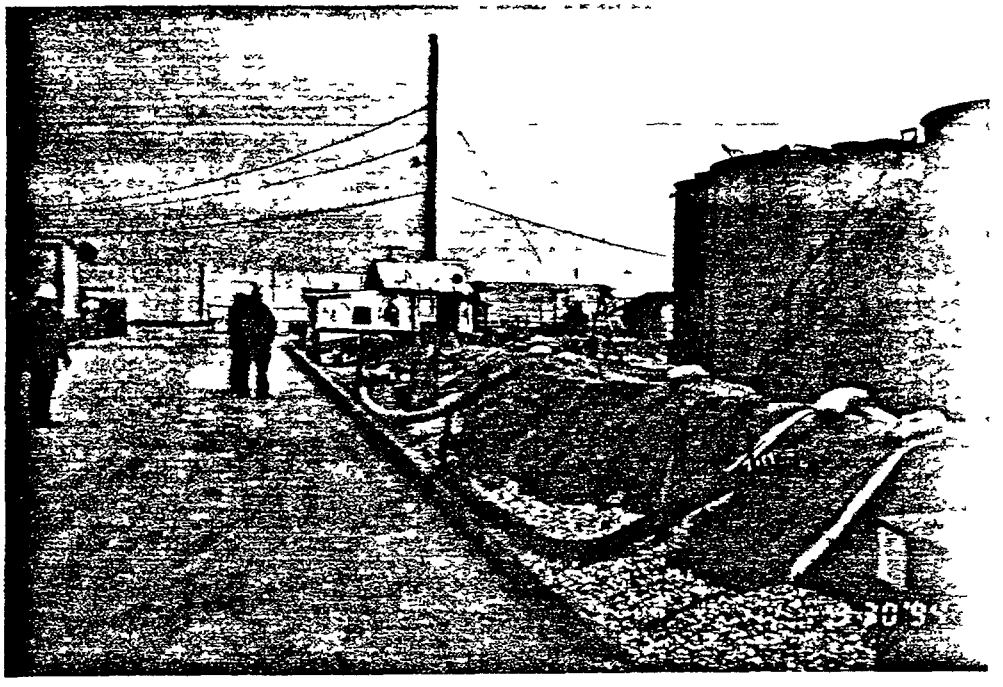


Photograph No. 36 This is a photograph of the associated piping system within the facility **(SWMU No. 14)**. The piping is color coded for identification purposes. Notice the lack of proper containment for the pipes.

Photograph No. 37 This is another view of the piping system within the facility **(SWMU No. 14)**. This view is looking north. Notice the lack of proper containment for the pipes.

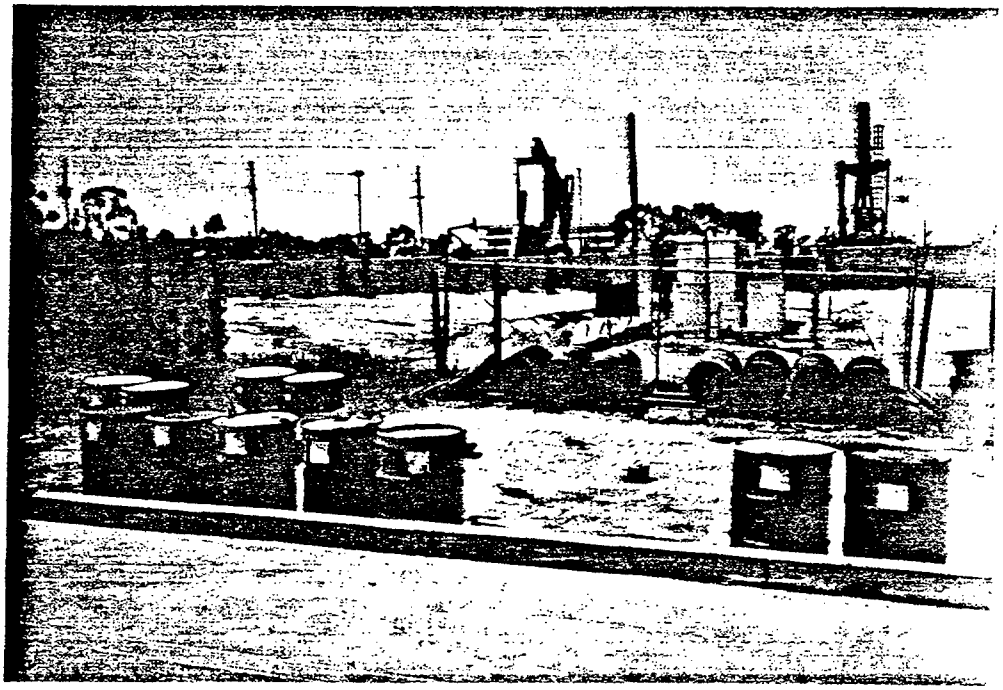


Photograph No. 38 This is a close up view of the piping system near tanks T3 and T4 **(SWMU No. 14)**. Notice the lack of proper containment for the pipes.



Photograph No. 39 This is another view of the loading/unloading area. The vacuum pumps are used to load and off load waste oil within the tanks contained within the tank farm **(SWMU No. 12)**. Notice the lack of proper containment.

Photograph No. 40 This is a close up view of a portion of the piping system within the facility **(SWMU No. 14)**. Notice the rust and corrosion and the dark oily stained soil beneath the pipe.

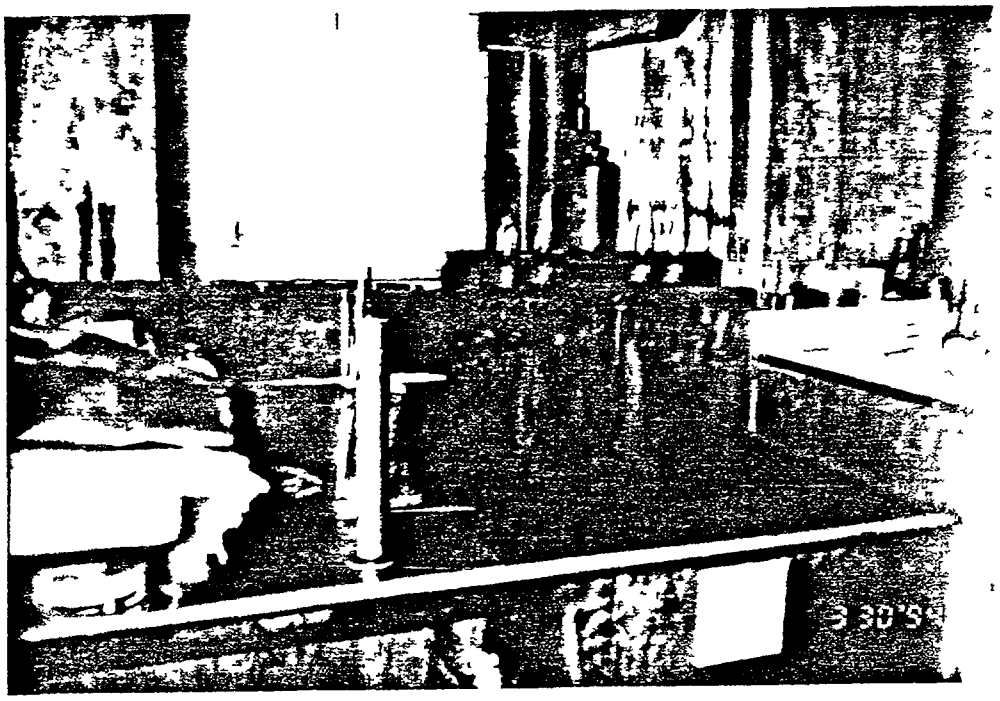


Photograph No. 41 This is a photograph of the Drum Storage area **(SWMU No. 15)**. This area has a partial cement pad floor. Notice the cement pad does not extend to end of facility boundary.

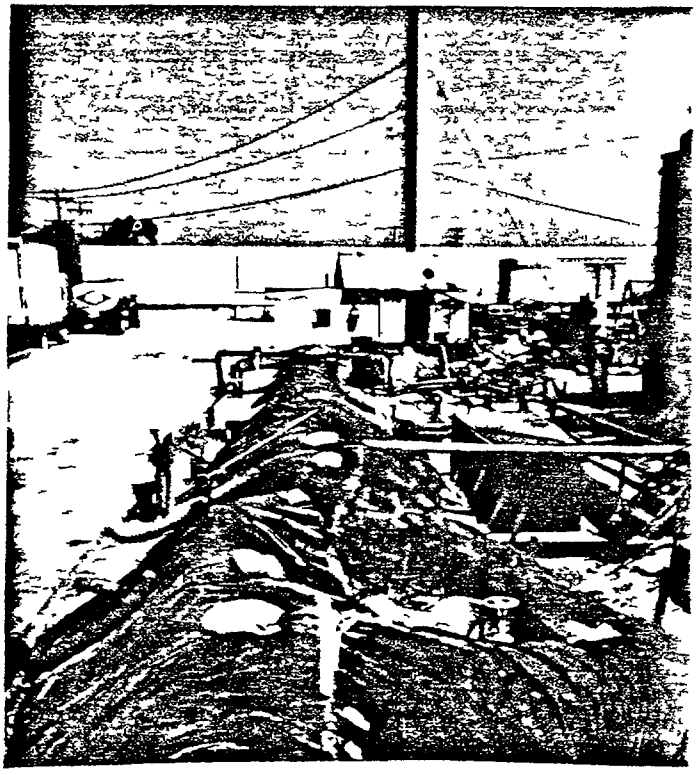
Photograph No. 42 This is a close up view of the Drum Storage area **(SWMU No. 15)**. This area has a partial cement pad floor. Notice the cement pad does not extend to end of facility boundary.

Photograph No. 43 This is a photograph of four drums of polychlorinated biphenyl (PCBs) contained within the drum storage area **(SWMU No. 15)**.

Photograph No. 44 This is a photograph of the Laboratory/ Satellite Accumulation area **(SWMU No. 16)**. The laboratory is located in a covered building.

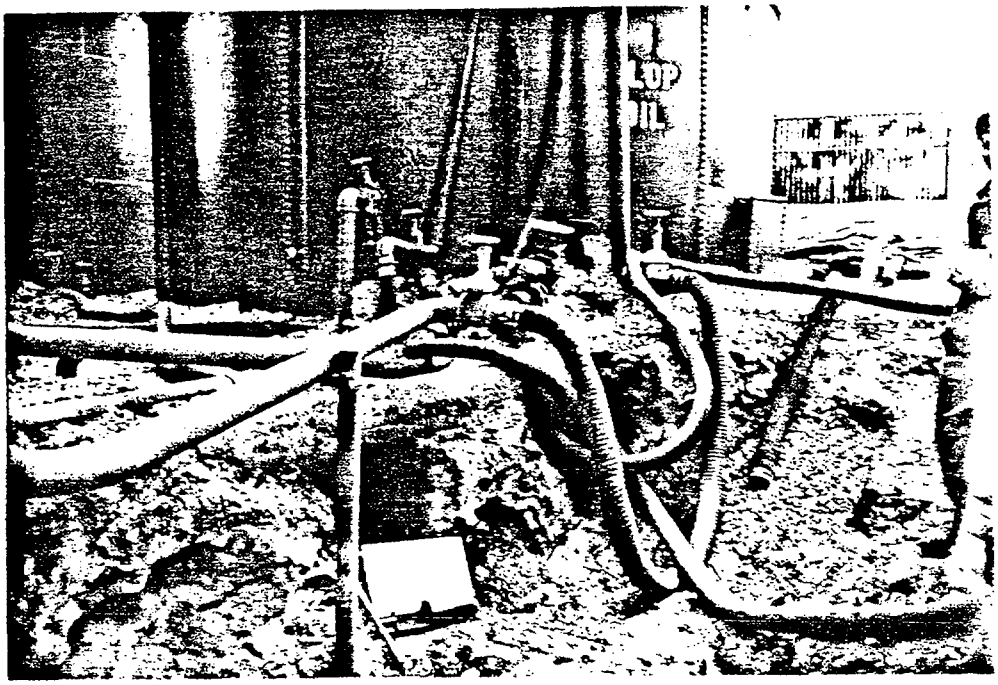


Photograph No. 45 This is another view of the Laboratory/ Satellite Accumulation area **(SWMU No. 16)**. The laboratory is located in a covered building.

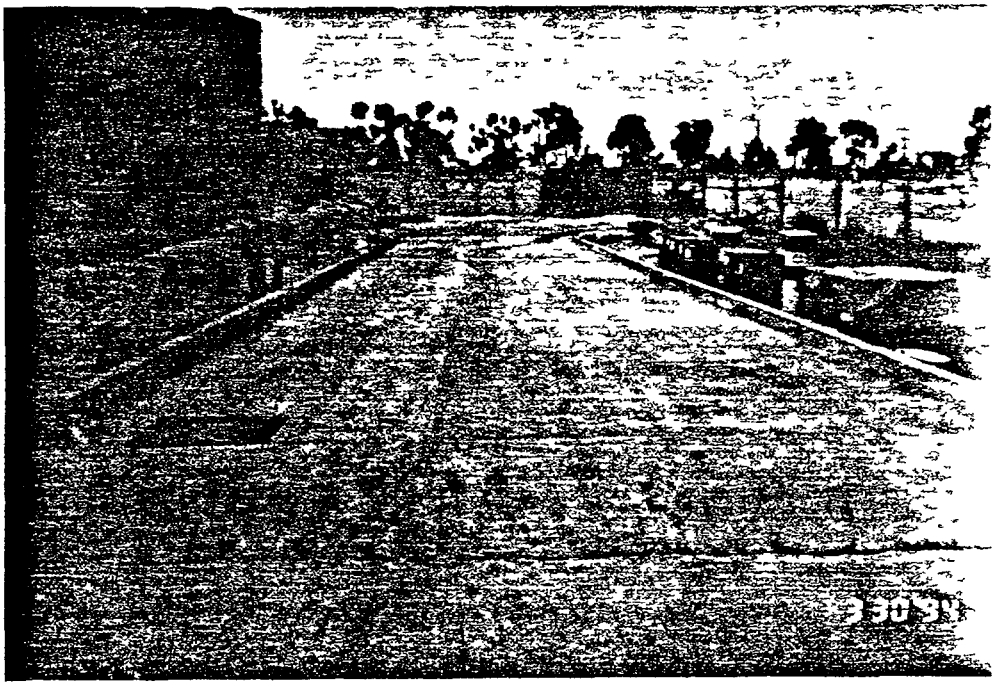


Photograph No. 46 This is a photograph of the Laboratory building located near entrance of the facility **(SWMU No. 16)**.

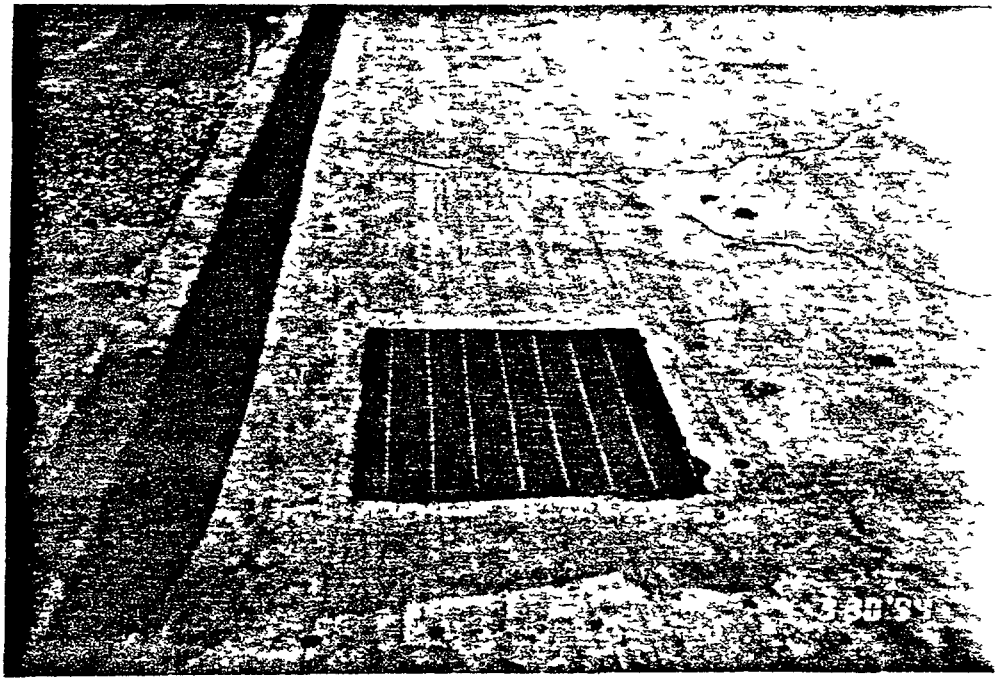
Photograph No. 47 This is a photograph of the area that had a documented release of polychlorinated biphenyl (PCBs) **(SWMU No. 17 & 18)**. This area is near tanks T3 and T4. Notice the dark and oil stained soil.



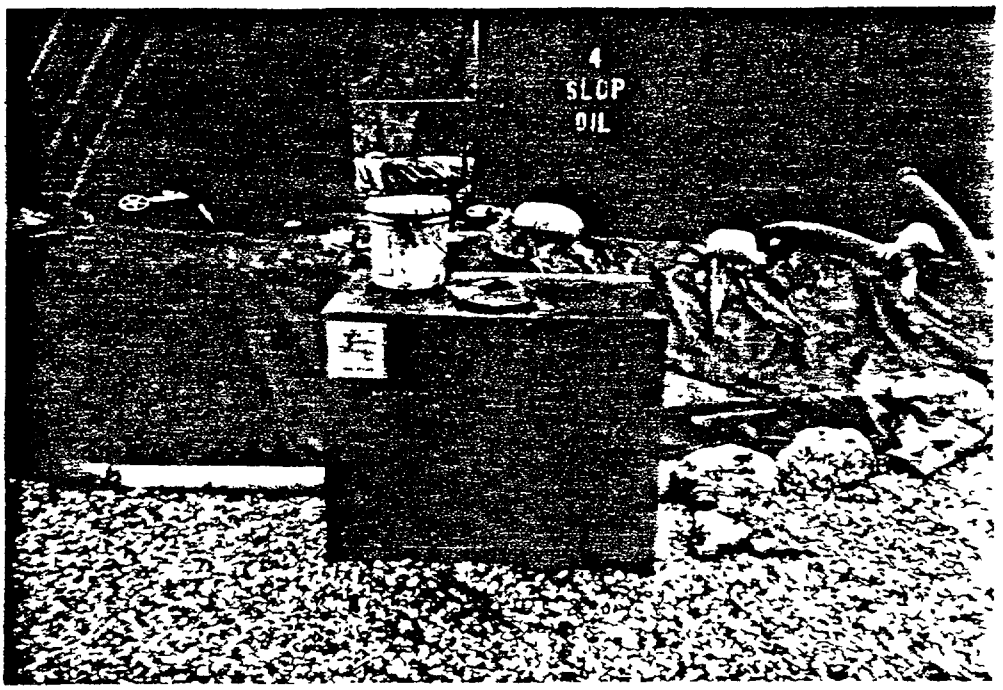
Photograph No. 48 This is another view of the area that had a documented release of polychlorinated biphenyl (PCBs) **(SWMU No. 17 & 18)**. This area is located within the trench near tanks T3 and T4. Notice the dark and oil stained soil.



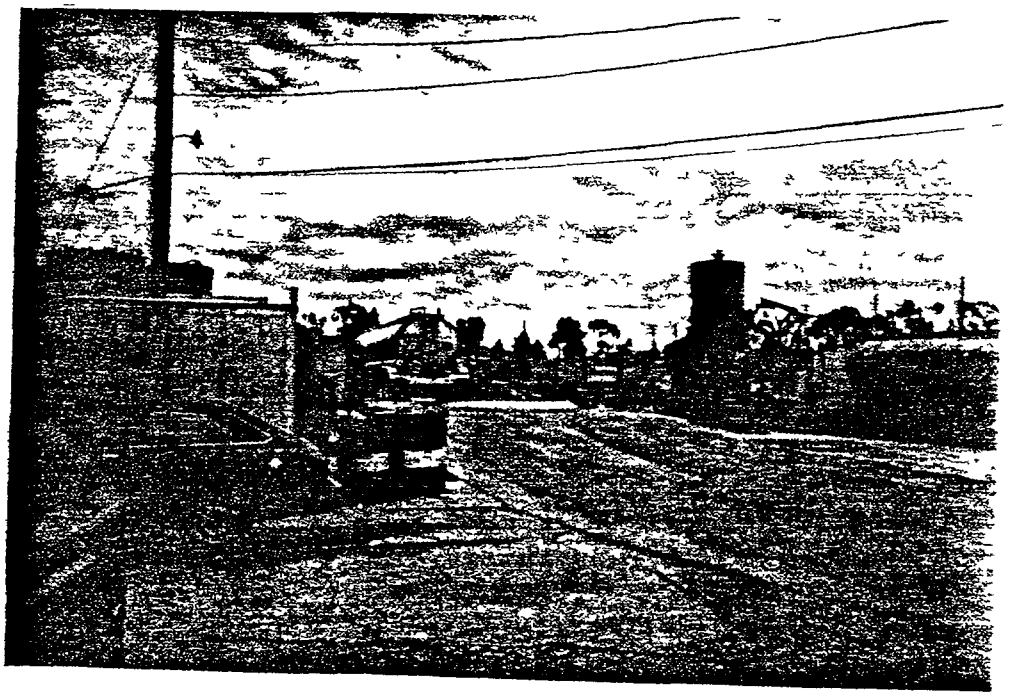
Photograph No. 49 This is a photograph of the Sump contained within the Truck Loading/Unloading area within the facility **(SWMU No. 19)**. This view is looking south.



Photograph No. 50 This is a close up view of the Sump contained within the Truck Loading/Unloading area within the facility **(SWMU No. 19)**. This view is looking south.



Photograph No. 51 This is a photograph of a 110 gallon tank used for oil storage from spills that may occur during Loading/Unloading area within the facility. Notice the oil stains on the gravel beneath the tank which lacks proper containment.



Photograph No. 52 This is a photograph of two water tanks (right side of photo), used for emergencies that may occur at the facility.

Photograph No. 53 This is a photograph of a 110 gallon tank used for oil storage from spills that may occur during Loading/Unloading area within the facility. Notice the tank is placed on a concrete pad.

Photograph No. 54 This is a photograph of the exit from the facility located at the southwest boundary. This area exits to a vacant lot at Rose and 29th streets.